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☞ The *Mechanical Engineering* department of this paper will be under the charge of Mr. ZERAH COLBURN.

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American Railroad Journal.

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Saturday, December 31, 1853.

Railroad to the Pacific.

We concluded, last week, the publication of Mr. Johnson's articles upon the subject of the Pacific railroad, with the exception, perhaps, of one or two more, which may be added at some future time, by way of *Appendix*.

There can be no doubt that Mr. Johnson has rendered this great project a most valuable service. *His* is the first attempt to treat the subject in a logical and analytical manner; to collate and compare all the testimony which existed, and to present the *results* of such evidence to the public. So far as such evidence exists, he may be said to have exhausted the subject. His articles must take the place of the absurd and extravagant notices which have prevailed, and must silence the nonsensical gabble, which those who know the least, have been most accustomed to indulge in.—Just in proportion to the magnitude and difficulty of the work, have politicians and interested parties been free to express their own opinions, and to speak as authoritatively as if they were *experts* in the art of railroading, or that the work were the pastime of a day. To ask the opinion of such men upon the subject of a railroad of a hundred miles in extent in the *States*, would be to strike them dumb, or if they attempted an answer, to cover them with ridicule. Upon the subject of a railroad to the *Pacific*, they are most eloquent, simply because a knowledge of the difficulties of the work places no restraint upon their imagination.

Mr. Johnson's articles will have another good effect in calling to the subject the attention of the *engineering* profession, in which, in critical and patient research, in scientific skill, in sound judgment, and in a thorough training in his profession, he occupies the very front rank among his brethren. The very fact that he has put his reputation at stake in the discussion, is good evidence that he has thoroughly considered the subject. His articles therefore, are not only the first attempt to discuss the subject in a proper manner, but must be considered as going far to settle the question of route, unless some important additional evidence be thrown upon the subject. Assuming that no such evidence exists, his conclusions appear to be uncontrovertible.

We believe Mr. Johnson has shown the construction of the above road to be much less difficult than it has been supposed to be by the engineering profession. Certainly there is no difficulty in constructing speedily, and at moderate cost, a railroad for the western shores of Lakes Michigan, and Superior, to the base of the Rocky Mountains, a distance of some 1200 miles. Within the *States* a first class double track, railroad, with no greater physical difficulties than would probably be found on the proposed line, could be built and equipped at a cost not exceeding $40,000 per mile. The route is of the most favorable character. The great obstacles would be the distance of the *scene*, from the *base*, of operations, and the expense of transporting and maintaining large bodies of men upon various parts of the line. But this difficulty is by no means so great as would appear at first sight. Gov. Stevens demonstrates the fact, that the Missouri River is navigable to the Grand Falls on the 33d parallel west from Washington, and as the road would follow the Valley of the River for nearly one-half of the distance from Lake Superior to the Mountains, the River would serve as a convenient medium of maintaining the communication with so much of the line, and allow not only the graduation of the road, but the laying of the superstruction to be going on, at numerous points, at the same time.

From the great bend of the Missouri, to Lake Superior, and Lake Michigan, the work could be pushed east and west at the same time, which would reduce the transportation of *material* to about 200 miles from the starting points; not so far as many of our roads now in operation have been compelled to transport. There are no *physical* obstacles to prevent the construction of *this* portion of the road within 4 years, or 5 at least, after the commencement of the work. There would be no difficulty in concentrating and maintaining a sufficient force upon the various parts of the line for this purpose. It is well known that the *prairies* may be converted into *cultivated* fields by the use of the plough only, in the course of a few weeks and be made to produce abundant harvest the *first* year. The whole route is very healthy, and sufficiently supplied with wood, coal and water. The only problem involved in the construction of the Eastern Division of the road, is that of *means*. These provided at the rate of $40,000 per mile, the cars could made to run to the base of the Rocky Mountains within *four* years after striking the first blow. Should the Western Division be found equally favorable, the mighty work of a railroad, connecting the Atlantic with the Pacific, could be completed in the period of *five years!*

The importance of such a work, and its value to this country; transcends all description. It would become the route of commerce, and commercial intelligence, for both hemispheres, and could not fail to make New York, in time the centre of the monied operation and commerce of the world. Only a few years would elapse before it would change places with *London*. The influence of such a work upon all the operations of business, and in changing the relations that England now bears to the commercial world cannot be painted by the most sanguine imagination.

Its *general* influence could be hardly more marked, than that upon our own continent. Its Eastern Division, extending from the shores of the great lakes, would for nearly 1200 miles traverse a region, the greater part of which, is probably not excelled in this country, in its adaptedness to become the attractive abodes both for our own people, or emigrants; a region almost equalling in extent the habited portion of the country. Towards this region is the next tide of emigration to flow, and with the assurances that it is soon to become

the route of a railroad to the Pacific, every portion of it will soon be swarming with an active and enterprizing population. What a grand mission is here before us, if it be only to reclaim a wilderness, and make it the abode of civilized man. Hence is sufficient motive for the immediate construction of the *Eastern* portion of the road. But a railroad crossing the continent, and uniting the two oceans, is a still grander scheme; the great Epic in the history of the physical progress of this country; the greatest achievement of human science and skill, to be followed by the grandest results.

Report of the Directors of the New York and Erie Railroad Company to the Stockholders.

The operation of the working of the New York and Erie railroad for two years after the completion of a single track between the Hudson and Lake Erie, was necessary to place so extensive an enterprise, in that degree of order, which was necessary to develope its resources, and to establish its business connections.

The termination of this second year's operations is deemed a fitting occasion for reviewing somewhat more at length than has been customary, the origin, progress, and prospects of the work.

From a continuation of causes, the New York and Erie railroad is regarded with more general interest than any other private enterprise in the United States.

Its great length, large expenditure, heavy debt, and its immense and rapidly increasing receipts have attracted the attention of the Statesmen, the financiers, and the merchants, not of this country alone, but of Europe, and it is almost universally conceded that upon its ultimate success, the future prosecution of other great lines, and, to some extent, the American system of railroads, will materially depend.

The large receipts from the business done during the past year, as well as the continued increase of that business year by year since the road was opened, in successive sections until its final extension to Lake Erie, surprised the friends of the work nearly as much as it did those who regarded it with no personal interest, or who had formed unfavorable opinions respecting it.

The general prosperity of the country during the last three years, has undoubtedly been one of the primary causes of the large revenues of nearly all of the completed lines of railroad;* but there is a combination of circumstances connected with this road, which does not exist in reference to any of the other great lines, although some of the benefits arising therefrom are shared by one or more of those lines.

It has no competitors, and especially no competing water lines, for the greater portion of its business; its resources are largely increased by the contributions of many tributary roads, which, like the country it penetrates, have had no other direct outlet to market; and it lies in the direct line of the greatest trade and travel which exist on the continent, with its terminus at the focus of that trade.

The stock and bond holders of this company have at this time so large a pecuniary interest invested in the enterprise, that it is deemed important to lay before them and the public a brief retrospect of the past history, the present condition, and future prospects of the work.

For convenience of reference, these subjects will be examined under the following general heads:

I. The history of the undertaking.
II. A topographical description of the route and the obstacles which prevent the construction of competing lines.
III. Its tributary roads and water lines within and beyond this State.
IV. The resources for business; the trade of the west, and the portion of it due to the New York and Erie Railroad, from its location and facilities.
V. The character of the road as now constructed, and its cost.
VI. An analysis of its present business.
VII. A comparison of its business, revenue, and expenses, with that of former years, and of other roads.
VIII. The organization and management of the road.
IX. Its financial condition.
X. The probable future revenues and expenses.

I.—THE HISTORY OF THE UNDERTAKING.

The citizens of the Southern Tier of counties in this State co-operated heartily with those of the central counties in the construction of the Erie Canal. When that work was completed, (in 1824,) their attention was directed to the opening, from Lake Erie to New York, of some better thoroughfare than the common roads of the country afforded to the southern portions of the State.

The rugged nature of the country rendered the construction of a canal leading directly to New York impracticable; but the State, soon after the completion of the Erie Canal, commenced the construction of the lateral canals, connecting with the interior lakes, which stretch from the Central to the Southern counties, and subsequently the Chenango and Genesee Valley Canals; the former of which extends from the Mohawk to the Susquehanna, and the latter nearly from Lake Ontario to the Alleghany River.

In 1825, the Legislature directed a survey for a State Road from Lake Erie to the Hudson River, through the southern counties. Several conventions were held between 1826 and 1830, for the discussion of the question—first, of a State Road, and subsequently of a railroad, through this district.

Application was made to the Legislature of 1832 for a charter for a railroad, which was granted, and the Act incorporating the New York and Erie Railroad Company was passed on the twenty-fourth of April of that year, with a capital of ten millions of dollars, with power to construct a single, double, or treble track from New York, or some eligible point in its vicinity, to Lake Erie.

During the year 1832, De Witt Clinton, Jr., an Engineer in the employ of the General Government, made a survey of the proposed line of the railroad, and copies of his maps, etc., were furnished to the company. The Legislature, at its next session, amended the Act of 1832, by requiring a preliminary subscription of one million of dollars only, before commencing the work. In July, 1833, this amount of stock was subscribed, and in August the Company was organized, Eleazer Lord being elected the first President.

The Legislature of 1834 appropriated fifteen thousand dollars for a survey of this railroad, and under this Act, the Governor appointed Benjamin Wright as engineer, who made the necessary surveys, and submitted his map, estimates and report to the Legislature in 1835.

The company was re-organized in that year, and James G. King elected President.

The books of subscription were again opened, and an amount subscribed, which, together with that previously made, amounted to $2,362,100.

New surveys were made during the year 1835, and in November contracts were made for constructing forty miles of the road along the Delaware River.

The great fire in the city of New York in December 1835, rendered many of the subscribers, (who were chiefly from that city,) unable to make further payments on their subscriptions of stock, and compelled the company to suspend its operations.

The Legislature of 1836 granted to the company a loan of the credit of the State for three millions of dollars, but by the terms of the Act, it was unavailable during the financial embarassments of that and the following year.

This act was amended by the Legislature of 1836, and under its requirement, portions of the work were placed under contract, at each extremity of the road.

During the years 1838 and 1839, the work was prosecuted in Rockland and Orange counties, by the aid of local subscriptions.

In 1840, Mr. Lord was again elected President, and in February of that year, the Susquehanna Division was put under contract, and subsequently the western Division. The same year, the Legislature again amended the Loan Act, and in June of that year, the company purchased the iron required for the eastern Division, on favorable terms.

In 1841, James Bowen was elected President; in 1842, William Maxwell; and in 1843, Horatio Allen.

In April 1842, the company was compelled to place its affairs in the hands of Assignees; but this assignment was subsequently pronounced invalid by the Supreme Court, and the Assignees re-conveyed the property to the Company.

The Legislature of 1843 passed an Act, which was intended to release the State lien on the road, but the object was not attained by this bill.

In 1844, Mr. Lord was again chosen President, but soon afterwards resigned. The Board was subsequently re-organized, and Benjamin Loder was chosen President, and continued in that office until June, 1853, when he resigned, and Homer Ramsdell, the present incumbent, was elected.

In 1845, the Legislature passed an Act releasing the State lien and authorizing the original subscribers to surrender two shares of the old stock, and receive a certificate of one share of the new.

A new subscription of three millions of dollars to the Capital Stock of the company was obtained, and its affairs were placed in such a condition, as to give assurance to the friends of the enterprise that a brighter day had dawned upon it. But whilst this period may be regarded as an epoch in its history—a starting point from which the work moved forward without cessation until its final accomplishment—its progress for the first year was slow, and the financial difficulties which were encountered, were such, as at times to tax the skill and energy of its managers to their utmost capacity.

Up to this time, (1845) but little practically seems to have been accomplished; that portion of the road extending from Piermont to Middletown, a distance of fifty three miles only, having been brought into actual use, and seven miles of this distance, (from Goshen to Middletown,) having been built by an Association to whom the Company was still indebted for its construction. The character of the work which was completed, was such as still to require a very heavy expenditure, to render it safe for the transaction of business.

The question of location, West of the Shawangunk Summit, was undetermined—Commissioners having been appointed by the State to determine the route to be adopted. The Company was there-

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*The following table of the comparative receipts on some of the principal lines of railroad for the month of September, 1852 and 1853, will serve to show the general increase of the business of the country:

The New York Central			
In 1852, about	$420,000	in 1853,	$560,000
The Hudson River	99,454	"	131,079
The New York and Erie, (increase 37 per cent.)	375,176	"	512,634
The Pennsylvania Central	169,441	"	260,036
The Baltimore and Ohio	192,625	"	271,029
Increase, 38 per cent	1,256,696		1,737,778
The Michigan Central	139,634	"	182,593
The Michigan Southern	115,289	"	198,401
Increase, 49 per cent	$254,923		$381,000

fore prevented from prosecuting the work beyond that point, until their decision was received.

In October, 1846, the road was opened to Otisville, a distance of sixty-one and a-half miles from Piermont, and soon afterwards, (the Commissioners, having in the mean time, decided against the feasibility of the route through the interior of Sullivan county,) the Company located their road along the Delaware Valley, and placed that portion of it, extending from Otisville to Binghamton, a distance of one hundred and thirty-nine miles, under contract. From this time forward, the work was prosecuted with great vigor, and notwithstanding its very formidable character, being by far the heaviest and most expensive section on the whole road, it was completed and opened to Delaware, during the season of 1846, and to Binghamton, on the twenty-seventh of December, 1848.

In March, 1849, the Directors made their Report to the Stockholders, in which they state that there had been expended up to that time on account of the work, $9,802,433, assuming the amount on the fourteenth of May, 1845, (after the release of the State line, and the consolidation of the Stock,) at $1,458,000.

Prior to the date of this Report, a contract had been made for an extension of the Road to Elmira, upon which payments had been made in the securities of the Company. These payments are not included in the above statement.

The road was opened from Binghamton to Owego, twenty-two miles, in June, 1849; from Owego to Elmira, thirty-six and a-half miles, in October, 1849; and from Elmira to Corning, eighteen miles, on the first of January, 1850. The Newburg Branch (nineteen miles in length) was also opened in January 1850.

An address was presented, by the Directors, to the Stockholders, on the first of February, 1850, from which it appears that there had been expended, up to that time, the sum of $14,428,891, in the completion of so much of the road as is above described.

The road was opened to Hornellsville on the twenty-third of September, 1850, and to Dunkirk, on the fourteenth of May, 1851.

But a short period had elapsed after the completion of the first track to Dunkirk, before it was ascertained that the rapid accumulation of business on the eastern end, required the facilities of a second track. The Directors accordingly placed the work of the second track under contract, on that part of the Eastern Division, extending from its junction with the Jersey Road at Sufferns, to Delaware, a distance of fifty-six miles, and also that part of the Delaware and Susquehanna Divisions, from Deposit to the junction with the Elmira and Canandaigua Railroad: All which has since been completed and brought into use, except thirteen miles between Otisville and Delaware, and fifteen miles between Deposit and Susquehanna, both of which will be completed in January next.

The saving of time which would be effected by sending the passenger trains over the Ramapo, Paterson and Jersey City railroads, induced the Company to enter into an arrangement with those Railroad Companies, to relay their tracks to the same width of gauge as that of the New York and Erie. This was done on the Road from Sufferns to Paterson, and the wide cars commenced running thereon in October, 1852.

The line between Paterson and Jersey City, was completed in the present month, and the trains now run without change of cars between Jersey City and Dunkirk.

In this connection it is due, that proper homage should be rendered to those, whose sagacity originated the work, and who persevered through so many difficulties, in establishing this iron highway, between the Atlantic metropolis and the Valleys of the Lakes—a work greater in its extent and cost, than any other enterprise, which has been accomplished by any private Corporation, or by any Government in America—exceeding as it does, in these respects, even the Erie Canal, of which the Empire State is so justly proud.

At the present period, marked as it is by the boldest projects, and the immense expenditures for railroads, we can scarcely realise the difficulties, which were encountered during the progress of this work, from the hesitation which capitalists felt at making the large advances of money which were required to carry it forward. Experience has now demonstrated, that no more safe or profitable investment can be made in this country, than in a well located and well managed railroad.

This Company struggled through periods that many other similar works sank under. Even the rich and powerful State of New York, faltered in the completion of the enlargement of her great Canal, when two-thirds of the expense had been incurred and remained unproductive, although having before her a well tried experiment, of the original work producing an annual return of over twenty-five per cent on its cost.

Our own State, which should have extended her aid to a work, which has, next to the Erie Canal, done more than any other, towards developing her resources and enriching her citizens, has, during its progress, embarrassed the operations of this Company, by unnecessary legislation and interference with questions of locality and terminus, to an extent which has rendered valueless her stinted gratuity.

A neighbouring State, whose citizens have in like manner been enriched by the construction of this road, has exacted from the Company, onerous conditions and tribute.

II.—TOPOGRAPHICAL DESCRIPTION OF THE ROUTE, AND THE OBSTACLES WHICH PREVENT THE CONSTRUCTION OF COMPETING LINES.

The New York and Erie Railroad extends from the Hudson River to Lake Erie.

Upon the former it has three termini: First, at Jersey City, opposite the city of New York; second, at Piermont, where it is also connected by a ferry of twenty-four miles with New York; and third, at Newburg, where it is connected by another ferry of sixty miles, with New York.

The western terminus of the main trunk line is at Dunkirk, on Lake Erie, forty miles west of the city of Buffalo.

Three tributary Roads had been built by independent companies, northward from the main trunk, giving it a terminus by two of them at Buffalo, and by the third at Tonawanda, Niagara Falls, and the head of Lake Ontario.

Two tributary Roads have been commenced, running from the western part of the Road southward,—one extending to Pittsburg, the head of navigation on the Ohio, with lines of roads leading to Cincinnati, Cleveland, etc., and the other leading to Erie, on Lake Erie, ninety miles west of Buffalo.

Other tributary Roads intermediate, running both northward and southward, are constructed or in progress, which will be alluded to in another place.

The New York and Erie Railroad passes from the valley of the Hudson River, over the dividing ridge between it and the Delaware at Otisville, and descends to the latter, very near the corners of the three States of New York, New Jersey and Pennsylvania. It follows the valley of the Delaware River to Deposit, and crosses the dividing range between it and the Susquehanna, and descends to the latter at Lanesboro', and continues in the valley of the Susquehanna and its tributaries, (the Chemung, Tioga and Canisteo,) to Hornellsville; thence it crosses to, and follows the valley of the Genesee as far as Belvidere.

From Belvidere, on the Gennesee, it crosses to the Valley of the Alleghany, and follows it, and one of its branches, the Little Valley, to Little Valley Station, whence it crosses to Lake Erie.

The summit of the road at the Shawangunk, is seventy-six miles from New York, and is 896 feet above the level of the tide.

The road enters the valley of the Delaware, at eighty-eight miles from New York, and continues in it for ninety miles. Where it first strikes the Delaware, it is 436 feet above tide, and at Deposit it is 997 feet. At the summit, between Deposit and Lanesboro', the road is 1,366 feet above tide, and where it strikes the Susquehanna it is 907 feet; where it strikes the Chemung it is 806 feet, and at Hornellsville, (one hundred and forty miles from Susquehanna,) it is 1,189 feet above tide. The summit betweeen the Canisteo and Genesee is 1,760 feet; at Phillipsville it is 1,369 feet; and at Belvidere, thirty-eight miles from Hornellsville, the road is 1,331 feet above tide.

The summit, between the Genesee and Allegany Rivers, is 1,677 feet, and at the latter, the road is 1,418 feet above tide. The distance from Belvidere to the Allegany is twenty-nine miles. The road follows in the Allegany and the Little Valley, for sixteen miles, to Bucktooth, which is forty-five miles from Dunkirk on Lake Erie. The summit, between Little Valley and the Lake, is 1,596 feet, and at the Lake, the road is 580 feet above tide.

From the Hudson to the summit of the Shawangunk, the land, though broken, is very fertile, and sustains a dense population. Along the Delaware River, it is mountainous and sparely settled, but the lateral vallies are productive, and extend to the fine dairy districts of Delaware and Sullivan, which already supply the road with a large and rapidly increasing trade and travel.

Along the Susquehanna and its tributaries, the valleys are broad, and of such extraordinary fertility, that this section of the State, had attracted the earliest settlers of Western New York. In the Valley of the Allegany, and thence to the Lake, the country is rapidly being filled up with an energetic and thriving population.

The railroad occupies so much of the valleys of the Delaware, Susquehanna, Genesee, and Allegany, as run eastward and westward, and crosses the dividing ridges at their lowest depressions. Both to the North and South, insurmountable difficulties would have been encountered.

On the North, the County of Orange is traversed North and South, by the Shawangunk mountains, the Western slopes of which descend abruptly to the deep valley, occupied by the Delaware and Hudson Canal. From these streams the land rises suddenly, to the elevated portions of Sullivan and Ulster, which, as well as Delaware and Otsego Counties are also broken by both branches of the Delaware River, and by the Susquehanna, the Unadilla, and the Chenango. All of these streams run North and South, while the general direction of the Erie Road is East and West.

West of these obstructions, the Cayuga, the Seneca, and several smaller lakes, also lie directly North and South, and stretch nearly to the Central line.

On the South of this road lie the high mountain ranges, in New Jersey and Pennsylvania, along the sides of the Delaware, between it and the Susquehanna, and West and South of the latter.

No practicable route for a main trunk railroad exists between the New York Central and the New York and Erie; and all of the railroads, which have been either built or projected, have been parallel to, and between the obstructions spoken of, and have thus necessarily become tributaries of these two roads.

No practicable route, South of the New York and Erie, can be found sufficiently near it, to divert any of its business.

III.—THE LATERAL, TRIBUTARY ROADS WITHIN THIS STATE, AND THE CONNECTING ROADS AND WATER LINES BEYOND THE WESTERN TERMINUS.

The annexed table (A.) shows the lateral tributary roads, sixteen in number, of which seven are completed, making five hundred and thirty-four and a-half miles, at a cost of $15,870,786, and which are estimated to receive an annual revenue of $1,673,123, equal to $3,130 per mile. Five others, making four hundred and fifty miles, have been contracted for and commenced, at an estimated cost of fourteen millions of dollars, and an annual revenue, when completed, of seventeen hundred thousand dollars.

In addition to these, five roads are projected,

and will without doubt soon be commenced, making four hundred and seventeen miles, at an estimated cost of fourteen millions, with an annual revenue of nearly two millions of dollars.

All of these roads, when completed will make an aggregate length, of what may be strictly termed roads tributary to the Erie, of over *one thousand miles*, costing nearly *forty millions of dollars*, and estimated to receive an annual revenue of over *four millions of dollars*. These tributary roads, have each, one of their termini on the New York and Erie Railroad, and do not extend across it; and they are, with two exceptions, of the same gauge as the Erie, which is the only broad gauge leading to New York.

From an inspection of the accompanying map, it will be observed that all of these roads, except the three most easterly ones, converge from the North or South *towards* the Erie, and have no other outlet except it, and hence there can be no diversion of the aggregated business, which they will throw upon it, except by the construction of a road contiguous and parallel to it. This however is, as before stated, nearly or quite impracticable, from the nature of the ground on which it is laid, which occupies the whole of that portion of the valleys of the Ramapo, Delaware, Susquehanna, Canisteo, Genesee, and Allegany, which run towards the City of New York, the adjacent country being broken ground, with a constant succession of very high summits, deep valleys, or extensive lakes.

These tributary roads penetrate both the anthracite and bituminous coal and iron regions of Pennsylvania, and by means of the main trunk and its branches northward, form the shortest and cheapest lines for distributing these minerals to the interior and western portions of the State, and to Lakes Erie and Ontario.

Other Branches, as well as the Maine Line, penetrate the valuable pine regions, of the tributaries of the Susquehanna, Genesee and Allegany, and form, either by the main trunk, or by the State Canals, which are intersected in four places, the only outlet for this lumber to the New York market.

The Branches northward, open into the richest agricultural lands of Western New York, as those southward do, into the fine agricultural and mineral lands of Northern Pennsylvania.

The districts of country thus penetrated, afford a variety of product, which is not found on any other road in the Union; and this variety tends to equalize the freights in all seasons of the year,—thereby reducing the expenses of transportation in this branch of the business, very considerably below that which is incurred upon other roads, where a considerable portion of the freights are offered only at particular seasons of the year.

These tributary roads have been constructed, by large contributions from those living along them, who are the most competent to form correct opinions of their value.

That they will generally prove remunerative, none will seriously question. The Erie Road must receive the aggregated business of all these roads which it can perform without fear of diversion or competition. In this item alone, its Stockholders have a guaranty that they will receive an early and ample remuneration for their investment.

The Company has leased the Union Railroad in this State, extending from Sufferns to the road running through New Jersey to Jersey City. The Union Railroad Company, had previously leased the road from Ramapo to Paterson, and thence to Jersey City, on favorable terms, which was also transferred.

The tracks of these roads have been relaid, to correspond with the gauge of the Erie, many of the structures have been rebuilt in a substantial manner, and the whole line has been placed in complete repair, so that the trains are now run direct to Jersey City opposite New York.

The freight trains are run to Piermont, which saves about fourteen miles of railroad transportation, and increases the ferry transportation to twenty-four miles. Other freight trains are run to Newburg, which point on the Hudson River is sixty miles from New York, and reduces railroad carriage thirty-five miles.

The advantages of the route by the way of Piermont, for the conveyance of all, except express freight, have been frequently set forth in previous reports, and are evident to all who carefully investigate the question. The terminus at Jersey City is indispensable for the convenient and rapid transit of passengers, to meet the corresponding speed and convenieuces afforded by other lines; and in like manner the water communication between New York and Piermont, (and also Newburg,) places this Company in a like advantageous position, in respect to freight.

The extensive wharfing facilities at the Piermont terminus, are indispensable for the transaction of the bulky business of freight, sufficient room for which, could not be obtained at Jersey City, without a very large outlay.

The present arrangement for freight, affords every desirable convenience to the New York shippers, as the barges lie at a convenient wharf, central to the business portion of the city, where goods can be received from, and produce delivered to the New York merchants, almost at their own doors.

Arrangements have been made for the construction of a railroad of the broad gauge from Corning, in nearly a direct line to Olean. This road when completed, will be run in connection with the New York and Erie.

At Ceres, on the line of this road, (ten miles east of Olean,) a connnection will be formed with the Allegany Valley Railroad, now rapidly progressing, which will save about twenty-five miles of distance, to all places west and southwest of Corning, with more favorable grades and alignment than those of the present road between Corning and Olhan.

These roads, together with the Erie, will make the shortest and best line, from the head of navigation on the Ohio to New York, and will soon open the trade of the Valleys of the Allegany and Upper Ohio, (so rich in agricultural and mineral products,) and also complete the communication to the Ohio, from which they will receive large contributions, in consequence of the extraordinary cheapness of transportation on that river.

A broad gauge line of railroad has also been placed under contract, which will extend from the Allegany Valley railroad, near Ridgeway, through Western Pennsylvania, and the rich western reserves of Ohio, and thence, through the center of that State to Cincinnati, where it will unite with the Cincinnati and St. Louis broad gauge railroad, one-half of which is nearly completed, on which trains will soon commence running for one hundred miles.

Another broad gauge line has also been placed under contract, extending from the Allegany Valley Railroad through Northern Ohio, and will be continued through Indiana to Chicago, from which city a road of the same gauge is now being built through the interior of Northern Illinois, and of Wisconsin, to Fond du Lac, with a branch to the Mississippi.

Within three years, two lines of an unbroken gauge, of the same width as the Erie, will extend to the Mississippi, each of which, by including the Erie, will be over twelve hundred miles in length, besides the numerous branching lines already built, under way, or projected.

This unbroken gauge will facilitate the conveyance of passengers and baggage, and cheapen the transportation of freight and will lead to a unity of interest that will prove very beneficial to the New York and Erie Railroad, the main trunk of this part of the system.

It may be added, that the gauge of the Ohio railroads, with the exception of the lines above described, and one other, are regulated by law, and are different from the other New York roads; so that, except the Erie, none of them can derive the same advantage from these western connections.

From the western terminus at Dunkirk, on Lake Erie, a line of completed railroads extends to Cleveland, and thence to Cincinnati, Toledo, and Chicago, from each of which points, other lines of completed railroads radiate in every direction, and cover the States of Ohio, Indiana and considerable portions of Michigan and Illinois, with a complete network.

The same States are also connected directly with the Erie terminus, by the chain of lakes which surround their northern borders—by the Ohio and Mississippi Rivers, which extend around their southern and western limits—and by the four great lines of canals, which pass through the interior, and connect those lakes and rivers by uninterrupted lines of navigation.

To be continued.

Application of Steeled Tires.

BY ZERAH COLBURN.

The most direct and severe wear produced by the use of locomotives is experienced by the rails and by the tires of the engine driving wheels. As an illustration of the *relative* wear experienced by the tires and rails, a case may be assumed of an engine running each way, over a road of 75 miles in length, and for a whole distance of 39,000 miles in a year. This will amount to 520 trips per year, and the two driving wheels on each side of the engine will therefore touch each and every point in the line of rails 1,040 times during that period. As the depreciation of rails is allowed by engineers to be one chargeable to locomotives and tenders, and as there can be no doubt that one-half of this reduced amount is caused by the driving wheels, the total annual depreciation of iron rails may be taken as equal to that produced by 4,160 blows of the driving wheels, and of the load borne upon them. If the drivers are six feet in diameter, making 280 turns per mile, each point in their circumference is brought in contract with the rails 10,920,000 times, and as there are two tires on each side of the engine, the whole number of blows borne are 21,840,000; or 5,250 blows to one upon the rails. For every blow borne by the tires there is the same weight and friction as upon the rails. If 25 engines are run upon such a road, the depreciation, (by abrasion,) of tires of *each* engine is 210 times greater than the *whole* depreciation of the rails, allowing both to be of equally hard material, affording equal resistance to wear.

To reduce the relative wear of tires is a matter of much importance on account of economy. A surface harder than that of the rails, affording greater resistance to wear, must therefore be provided. The cast iron chilled slip tire, first cost and expense of application considered, answers all the ends required. With the use of wrought iron, many efforts have been made to protect the surface by hardening, and in England, at the present time, two varieties of hard-surface wrought iron tires are in extensive use. One, the Russia-iron tread tire; the other, Gooch's steel-tread tire. Both of these are represented by agencies in New York, and as American Companies will probably be induced to test either or both, it is well to explain such details of application as are essential to secure a satisfactory result.

The advantage in the use of steeled tires comes from the possibility of tempering them and rendering them exceedingly hard. It is therefore necessary that much attention should be bestowed to this end; as both the extent and uniformity of hardening are dependent upon the treatment of the tire after it is finished ready for the wheel.

In boring the tire, the English manufacturers recommend no more allowance for shrinkage than 1-100 inch for each foot in diameter of the tire. The rivet holes must be drilled before the tire is hardened. The wheel rim must be turned perfectly true, both on the face and edges, after which it is to be laid on a cast-iron face-plate, or ring, at least 2 inches thick and of 18 inches annular width. Lugs or ears must be cast upon three or four points of the outer circumference, to facilitate handling with a crane.

The wheel is laid with the outer edge flat upon the face-plate, if the tire is to be put on flush; or removed by thickness pieces of equal thickness, for any required projection of the outer edge of tire beyond the edge of the wheel rim. The wheel is then prepared for the tire, which must be heated to a *light red heat*, and with the greatest regularity, and immediately laid upon the face-plate, around the wheel; great care being taken to place it true and flat upon the plate.

The whole is then lifted by a crane, having chains attached to the lugs upon the face-plate, and is immediately plunged into a tank of cold water, or salt and water, the latter being preferable. The whole are moved about in the water until the tire is cold. The tank should be ten or twelve feet in diameter and five or six feet deep.

When the tire is shrunk upon the wheel the holes must be drilled through, corresponding with those in the tire, and rivets applied in the usual manner; or a better method is to secure the tire by side bolts, after the manner generally practiced for securing the chilled slip tire.

The advantages claimed for steel tires over those made from soft iron, are, that they will wear a much longer time, the relative hardness of steel and iron being as 8 or 10 to 1; and that they will preserve for a much longer time the true form of the tread. By the first advantage named the expense of maintenance is largely reduced, while by the second, the wear of the rails and machinery, due to irregular tread, is much diminished.

PITTSBURGH, Pa., Dec. 14, 1853.

To the Editor of the Am. R. R. Journal.

SIR:—We beg leave to say, through the medium of your Journal, to our numerous friends who have expressed a lively interest in the success of "*Copley's Compound Car Axle*," that we are pursuing the enterprise with as much speed as the extreme importance of having these axles well made, warrants. Their peculiar construction renders a good deal of new machinery necessary in their fabrication, and to have this prepared, requires time.

It must be obvious to every one at all conversant with railroad machinery, that if this axle is destined to succeed, it can only be by bringing it at once to the highest practicable perfection, both in material and workmanship. To this end we are sparing no pains to find and avail ovrselves of the best mechanical skill of the country, so that when we shall offer it to the railroad public, we can do so with the full assurance that we offer an article in which the fullest confidence may be placed. With the requisite machinery its construction will be neither difficult nor expensive.

Very respectfully, your ob't serv'ts,

J. COPLEY & Co.

Cost of Repairs of Locomotives.

BY ZERAH COLBURN.

The question is often asked by railroad men if an engine cannot be repaired and renewed so as not to become depreciated through constant and continued service. Undoubtedly it may, but which is cheapest; to renew all the parts of an engine when nearly all are worn out, or to purchase a new engine? A little consideration will give some force to this inquiry.

In the first place, master mechanics will admit, that, *in the manner* in which repairs are generally conducted on roads where from 6 to 8 cents per mile is allowed, an engine after 12 years use is sensibly depreciated in value, say one-half. The average run of passenger engines being say 25,000 miles per year, the repairs, at 8 cents per mile, amount in 12 years to $24,000, while the engine is $4,500 less valuable than when new. Thus, an engine costing $9,000, requires $28,500 to keep it good for twelve years, a sum more than *three times* its original cost; while its boiler shell, outer firebox, cylinders and frames, have not been renewed nor materially repaired. It cannot be said that the engine has been *renewed* three times as its most essential parts are left remaining. It is, however, proper to say that the tires have been renewed four or five times, and the *trucks* twelve times. The cost of these is perhaps $5,000 for the given period. There are very few of the remaining heavy parts which are renewed over three times in twelve years; while several of the most important parts are not renewed at all. The plain inference is that repairs and renewals, by the manner in which they are conducted, cost much more than the original construction of the same portions of the work; perhaps twice as much, a proportion which, upon consideration, will be generally admitted as correct.

If the machine is so run that its entire construction decays at about the same time;—if it wears out twelve setts of trucks; four setts of tires; four setts of packing; and two setts of tubes and tube sheets, in twelve years, and if, which is probable, the boiler, frame and cylinders be worn out also at that time, what is left of the engine? If it can be again made good is it not *rebuilt*, and essentially a *new machine?* If rebuilt at the repair shop, and some of the older parts are worked in, does the engine when completed, cost less than a new one from an established builder; and considering the entire reliability of the latter, in every part, is any thing saved even in rebuilding? The question of keeping an engine *good*, assumes there will be no essential improvements, affecting the general construction of the engine, and this matter is not therefore considered. It is well worth considering however.

The necessary repairs are increased with the age of the engine, as successive parts are attacked, each year, which were not embraced in the renewals of the previous year. This is evident in reason, although there are several circumstances which, although they do not affect the principle, serve to conceal it. In the first place the repairs of the light engines built from eight to twenty years ago could not consistantly require the same outlay, per mile run, as the heavy engines of more recent construction. Such engines are generally considered, where they are owned, as not so well *worth* repairing as newer and larger engines, and hence are not the objects of as much expenditure for preservation. Again, such engines are but little used, being for the most part kept in ordinary, or for shifting out trains, ballasting, &c.

The example of the Baltimore and Ohio railroad, having the *largest* and the *oldest* equipment of engines of any road in America, may be useful in considering the cost of repairs. This road has, by its report of September 30th, 1853, 167 locomotives; 157 of which are running between Baltimore and Wheeling. Some of these locomotives are 19 years old, although the majority are of recent construction.

The following table shows the cost of repairs per mile, for each class, of each year's construction of engines in use on the "Main stem" of the Baltimore and Ohio railroad, during the years ending Sept. 30th of 1852 and of 1853. The repairs for 1852 did not reach a high figure, but the figures serve to show the gradual increase of cost of preservation as we go back to the older engines. The repairs for 1853 show this in a stronger light.

Year of Reception.	No. of Engines received during year.	Class. No. 1.	No. 2.	No. 3.	No. 4.	Average cost of Repairs per mile for year ending Sept. 30th 1852.	Do. Do. for year ending Sept. 30th 1853.
						cts.	cts.
1834	2	..	.	.	2	1,88	6,64
1835	3	..	.	.	3	6,35	6,35
1836	5	..	.	.	5	4,01	6,15
1837	2	..	.	.	2	4,82	6,96
1838	6	..	.	3	3	3,65	6,38
1839	6	..	.	2	4	4,24	11,31
1840	2	..	1	1	.	21,62	6,00
1842	2	..	.	2	.	8,74	6,02
1844	4	4	.	.	.	5,82	22,02
1845	3	2	.	1	.	8,41	7,70
1846	8	6	1	1	.	11,92	10,13
1847	3	1	1	1	.	5,36	9,44
1848	11	8	2	1	.	6,40	18,90
1849	2	2	.	.	.	9,88	17,32
1850	6	6	.	.	.	4,51	13,22
1851	15	15	.	.	.	4,64	13,00
*1852	23	19	.	4	.	3,29	....
1852	36	32	.	4	.	....	8,55
1853	43	37	.	6	.	....	†7,82

This table I have prepared with much care from the company's reports, and considering the extent of motive power to which it applies, and the time over which it extends, it is believed to be of considerable value as an illustration of the influence of age on repairs. Some facts may serve to place its deductions in a better light. The first class engine of 1853 is very much larger than the first class engine of 1848, and sustains much greater wear. Again, in 1853, the formidable passage of the 116 feet grades had begun to exert a new and marked influence on repairs. And, still further, the old repair shops had been destroyed by fire, and not only had new ones been built to replace them, but others had been built at other points, by which the repair force was divided, the facilities not so well developed, and the expense of repairs increased. The high price of iron and the "labor strikes" at Baltimore, last spring, have both influenced the cost of repairs. The repairs of passenger engines have been in-

* Up to Sept. 30th 1852.

† Not including alterations of three *new* engines.

fluenced by the necessity of higher speeds, and by a general adaptation for burning *coke*, which has cost much money for arranging the engines, and in repairing for the increased destruction of the furnaces and tubes by reason of a more concentrated heat. A great many of the causes stated have operated especially against the engines delivered in 1852 and 1853.

It may then be stated, as a general principle, that the repairs of each year must not only embrace the renewals of previous years, but of parts not before renewed at all, so that the cost of repairs increases by an annual arithmetical progression up to the time of the decay of the most enduring parts; when, with the usual mode of conducting repairs, a new engine becomes cheaper than rebuilding.

It is therefore an object in making repairs to bear in mind the probable duration of the most enduring parts, so that a large quantity of new work may not embarrass the final disposition of a *worn-out* engine. "No man putteth a piece of new cloth unto an old garment," &c.

The question which I have raised is not that of the propriety of rebuilding under any circumstances, but of rebuilding as a recovery from the effects of gradual and total decay. With some patterns of engines they well deserve rebuilding before they leave the maker's hands; while again, the adaptation of engines, or the results of a collision or explosion, may properly warrant a general rebuilding.

The cost of repairs of locomotives is influenced by many considerations. The physical features of the road, nature of traffic, character of wood, water and attendance, character of original materials of construction, mechanical arrngement of engine, &c., are all influential in the necessity for repairs. A track kept in good line and good grade; a business not beyond the proper capacity of the engines, either in weight or length of run; seasoned wood, clean water, skilful and careful engineers; the best quality of materials, especially in the boilers and furnaces, where renewal is attended with the greatest expense; the outside connected arrangement of locomotive, properly constructed; and, above all, a safe system of despatching trains, and safe roadway structures, are the most favorable points for economical repairs.

The cost of engine repairs on several roads are exhibited in the following list.

Name of Road.	Miles run.	Cost of Repairs.	Repairs per mile run. cts.
New York and Erie, 1852..	2,389,271	$203,312 48	8½
New York and Erie, 1853..			
Union R. R....	114,825	15,795 86	13¾
Eastern Div....	746,627	73,657 04	9⅞
Delaware	569,448	72,669 11	12¾
Susquehanna..	703,384	74,055 21	10½
Western	656,225	52,467 09	8
Totals..	2,790,509	$288,644 31	10⅓
Baltimore and Ohio, 1852.			
Main Stem	1,515,784	$73,078 45	4,8
Wash. Br..	102,133	8,259 21	8,1
1853.			
Main Stem	2,009,446	194,036 13	9,6
Wash. Br..	191,882	15,876 18	8,0
Reading R R.			
1852.....	1,517,931	99,027 40	6,5
Penna. R. R.			
1852.....	663,991	32,630 07	4 11-12
Western & Atlantic R. R.			
1853.....	264,485	12,387 79	4,7
Little Miami R. R. (Ohio)			
1852.....	407,731	46,917 94	11,5
1851.....	301,640	23,143 90	7,7
1850.....	274,303	26,181 06	9,5
1848.....	189,606	15,959 66	8,4

The repairs of engines of the Boston and Maine and Fitchburg Railroads, for the year 1852, were about 5 cents per mile run, each. Those of the Boston and Worcester road were about 8,4 cts. per mile run. On the latter road the engines had been previously suffered to "run down", and a greater expense than usual was incurred to restore them to a good condition.

In drawing any inference from the preceding table, some particulars of the age and extent of the respective equipments may be proper to be given.

The engines of the Philadelphia and Reading Railroad were delivered as follows.

4	3d class	in 1838	8	1st class	in 1847
2	2d "	" 1840	1	4th "	
2	3d "	" 1841	1	1st "	in 1848
2	1st "	" 1842	3	2d "	
5	2d "				
10	2d "	" 1843	8	1st "	" 1849
8	1st "	" 1844	10	1st "	" 1850
7	1st "	" 1845	4	1st "	" 1851
18	1st "	" 1846	1	4th "	
1	4th "		13	1st "	" 1852

Total 103 engines.

Pennsylvania Central Railroad.

9 engines in 1849		3 engines in 1851	
14 "	" 1850	17 "	" 1852

Total 43 engines.

New York and Erie Railroad.

9 engines previous to 1848		31 engines in 1850	
9 "	in 1848	53 "	" 1851
29 "	" 1849	11 "	" 1852

Total 142 engines on broad gauge, besides 8 engines on the Union Railroad.

The date of the reception of the Baltimore and Ohio Railroad engines has been previously given, the number of their engines being 167.

The transportation effected by the equipments of the different roads being different, has a separate influence on repairs in each case. Of the roads named, the *Erie* has the largest passenger traffic, which involves the heaviest repairs of engines. The Baltimore and Ohio road has the most severe physical features, and although from this fact and the preponderance of the freight business, the average run of each engine is less in miles per year, there is no doubt but that each engine is subjected to as great influence of wear as upon the Erie road; the passenger business of the latter being excepted. The time during which the engines are daily under steam is as great on the Baltimore and Ohio road as on the Erie. A fair comparison of the expense of engine repairs would then be as follows; the average expense of repairs for each engine for the year ending Sept. 30th 1853 was, for the Erie road, $1924; for the Baltimore and Ohio $1254; for the Reading road (for the year 1852) $961 43.

The Baltimore engines are subject to heavier repairs on furnaces and tubes, owing to the use of coal fuel; but to much less expense in consequence of using the outside connected arrangement of engine, the cast iron slip tire (which saves the company $30,000 per year) to the equal distribution of weight in the engines, and to a greater degree of plainness and simplicity of construction.

The Reading road, although doing an enormous business and subject to the expenses attending the use of anthracite coal, has adopted very nearly the same system of motive power; has its repair force concentrated at one point; and has the advantage of favorable grades, by all of which, its repairs, considering the age and service of its equipment, are very cheaply made. Both the Baltimore and Ohio and the Reading roads are of the narrow gauge, and the economy of its operation, taken with that of the outside connection, the cast iron wheel and tire, and the equal distribution of weight, are in accordance with the general conclusions which have before been made for this system of application of motive power.

Black River and Utica Railroad

Below will be found a detailed and interesting statement of the condition and progress of the work upon the line of the above road, copied from the Utica Herald.

Progress of the Work.—There has been an interval of something over three months since the contracts for constructing the Black River and Utica Railroad were let, and a very general interest is manifested by this community and the friends of the enterprise generally, as to the progress of the work and the prospect of a prompt fulfillment of contracts. To satisfy the anxiety of stockholders, as well as to gratify the natural curiosity of that large class of people who manifest strong interest in the road only by asking questions about it, we have taken some pains to obtain reliable information in regard to the amount of work done, the relative proportion it bears to a completion, and the intentions of the Company and Contractors for the coming season.

The early date at which contracts were let and work commenced, threw upon the Company and the Engineers a vast amount of labor in making surveys, locating routes, preparing maps, plans and profiles, and in procuring the right of way. This labor was of a character that admitted no delay, and it has received at the hands of the President, Mr. Faxton, Mr. Spencer Kellogg, one of the Directors, and of Mr. Jenne, the Chief Engineer, and his assistants, attention that has known no rest.—The amount of work they have done, pressed for time and consequently subjected to vexations obstacles, no one can estimate, unless he has been a personal observer of their movements. The forwardness of the enterprise is evidence of their industry.

Meanwhile the contractors have not been idle. Since the last of August, Messrs. Farwell, Case, Lund & Co. the principal contractors, have sub-let all the sections between this city and a short distance beyond Trenton, embracing 16 sections, averaging one mile each in lengh, and sections 50, 51, 52 and 53, or about four miles in the neighborhood of Lowville and Martinsburg, Lewis Co., where the difficult and heavy nature of the work demanded early commencement. On these 20 sections, the work has been pushed with great energy by the competent sub-contractors, Messrs. Richardson & Co. on sections 1, 2, 3, Ure, Mirick & Co. on 4, 5, 6, G. S. Smith, & Co. on 7, 8, 9, 10, Barber & Clark on 11, 12, H. A. Smith on 13, Birdsall & Farwell on 14, 15, 16, and Phelps, Ray & Buell on 50, 51, 52, 53. There are about 500 men and from 50 to 100 teams constantly at work on the first 16 miles, and 75 to 100 men near Martinsburgh. Several points of the road furnish indications of the excellent character of the work. We

may instance as most convenient for observation, the very fine masonry done on section 1 for the foundation of the bridge over the Mohawk.

It would be difficult at this stage of the work to calculate exactly the amount of progress made, but the following statements of the condition of the road on the 1st day of December, to which time the last estimate was brought, are as reliable as can be obtained.

On the sections named on the 1st December there had been 148,000 cubic yards of excavation, 1,800 yards of masonry laid, 725 cubic yards of stone delivered, 77,000 feet of beech and hemlock timber and plank put in work or delivered. There are about eight miles of road graded for the laying of the track, with the exception of ballasting between Utica and Trenton. The balance is in actual progress and ground has been broken on more than half of the same. The grading for the entire distance to Trenton will be ready for the superstructure by the first of April next, and the masonry and bridging by the first of May, and the track will be laid by the first of June.

Sections 30 and 31 near Boonville, have been let and work has either been commenced on them already or will be in a day or two. This work includes the bridge across the Black River Canal.—Those in charge of the road are of opinion that it will be ready for running as far as Boonville by October, 1854, and to Lowville during the year 1851.

It is the intention of the contractors to let sections 17 and 18 between Trenton and Remsen, sections 35 and 36, near Talcottville in Lewis Co., the bridge across the Black River at Carthage, and the several smaller bridges, together with the heavy trestle work across Cincinnati valley at Trenton, on the 3d of January, as will be seen by the advertisement in our paper to-day. All this work will be commenced early in January and vigorously pushed. Some of the heaviest work on the line, on the sections already let in Lewis Co., is actively progressing.

Contracts have been made with responsible parties to furnish nearly 250,000 ties, and the northern woods along the entire length of the road are already resounding with the ring of the axe. An army of woodmen, sparing no trees that will cut into ties, is at work, and have already made considerable progress in the execution of their contracts.

The fences along the lines have been let to responsible parties, who are making preparations to drive the business with rapidity in the spring.

The right of way, the procuring of which has taxed severely the time, patience and shrewdness of the President, Mr. Faxton, and Mr. Kellogg, together with a number of valuable assistants, has been obtained for about nineteen-twentieths of the entire line.

A portion of the iron for the 1st division to Trenton, has already been purchased and delivered, and the remainder will be bought at once, so as to be here in time for track-laying in the spring.

Contracts have been made for the delivery by the first of June next, of three locomotives, with passenger, baggage and freight cars sufficient for running the road to Boonville.

Immediately on opening of spring, the northern divisions in Lewis and Jefferson counties will be commenced and energetically worked, and there is every reason to believe that the engagements of the contractors as to the dates for the completion of the several divisions will be strictly adhered to.

The most attractive point on the work now in progress, is on section 16, near the village of Trenton, where a steam excavator is employed in addition to a large force of men, to do some heavy cutting. It is on the north section let to Messrs. Birdsall & Farwell. This improved Irishman, or Steam Paddy, is attracting crowds of people to witness its operation, and the careless air with which it penetrates a bank, is worth a ride out there to observe. It will do the labor of sixty or seventy men, and makes about as much noise, but at vastly less expense. A good laborer, in ordinary excavation, will dig perhaps ten to twelve yards in a day. This iron "Irishman with variations," will shovel, when under good headway, nearly two yards per minute. This rate can not be reckoned on through the day, for more or less time is taken up with oiling, screwing up, moving the temporary track on which it stands, and other necessary jobs. The shoveling apparatus consists of a large bucket, capable of holding a yard of earth, suspended from the extremity of a projecting arm or bone, which can be turned at the pleasure of the engineer either towards the bank to be penetrated or the car to be filled. The shovel is suspended by chains running over pulleys. It is armed at the forward end where it enters a bank, with strong iron teeth, which serve as entering wedges for the scoop of the shovel. The whole machine is moved up to the face of a bank, the shovel is lowered and its teeth pointed into the earth. There is a quick succession of puffs and some wheezing, and the shovel is steadily propelled up through the bank, taking into its capacious mouth whatever it meets, till it rises to its level, filled to the brim. No matter if its teeth encounter gravel, or hard clay, or good sized stones; they are inserted for the purpose of going through and they do it, though it costs some extra puffs. Occasionally they encounter considerable rocks and then they are obliged to pause, wheeze in a sulky way and back down. But the vindictiveness with which the small stones are attended to immediately after, is evidence that the Steam Paddy can endure opposition only at the expense of temper. The shovel being filled, the boom is swung round so as to bring the load directly over a dirt car placed nearly by on a temporary track. As soon as it is over the car, the engineer withdraws a pin which supports the bottom of the shovel and the load falls. A steam shovel will keep a number of horses briskly employed in hauling off loaded cars and bringing them back empty. The contractors have constructed an iron track on which they run off their loads, and in the course of next week, or as soon as sleighing is good, it will well repay the trouble of riding out to see the operation of the "merchine." Politicians are especially dissuaded from going, for this Steam Paddy is the description of Hibernian that drew from the jealous flesh and blood paddy the exclamation, "Och, ye ould divil, but ye can't vote."

The rapidity and strength with which the shovel works, render it almost indispensable now in the execution of heavy work on railroads. The banks on which it is engaged at Trenton are heavy, but it will make daylight shine through them at an astonishing rate.

We have said enough in the above somewhat lengthy article to show our readers that work has been commenced in earnest on the Black River and Utica Railroad, and it is with great satisfaction that we are enabled to mark its progress towards completion. The Directors are pushing the enterprise with the energy it demands, and as rapidly as prudence dictates. In the spring, nearly the entire line will be under progress at various points, and in the time designated, we doubt not we shall be able to reach the St. Lawrence by railway over the whole route. The Directors and Engineers deserve the thanks of the stockholders for their faithful fulfillment of promises thus far. We have every reason to expect a continuance of the same.

The feelings of northern capitalists are materially changed in regard to our road. They see and acknowledge that it is to be built. They cannot see why two roads should be built on the same line, running side by side through the same farms, with essentially the same termini, and to do the same business, under circumstances of rivalry ruinous to the interests of both. They hesitate about embarking their capital in a second road, which will be built, if built at all, not to meet the demands of trade and travel, not to open to market a country that needs only an outlet to develop its wealth, not to enrich either the farms it mutilates, or the stockholders who build it, but to gratify the jealous ambition of an aspiring village. The Rome road, in spite of a few small gangs of laborers, who are tickling the soil at various conspicuous places on the line, is not needed and its friends feel it. The citizens of Rome would like to build it, but the subscribers at the North feel that "they are not worth the candle." The following paragraph expresses the exact position of this matter in the eyes of judicious men. "Double tracks and not double parallel lines is now the received theory, and it is likely to be a very long time before money can be found anywhere to duplicate railroads already equal to the wants of the country."

Our road *will be built*, and is competent to do all the business of the line. With this business it will handsomely repay its stockholders. When the business increases beyond the capacity of one track, let us have a double track in the same interest but not two distinct and competing roads, wrangling with the same farmers for their business, and ruining each other for the benefit of no one.

We are greatly mistaken if neighbors in Lewis, Jefferson and St. Lawrence counties are so anxious to participate in petty rivalry between Utica and Rome, as by building two parallel roads, to doom the investments in both to certain detriment, if not ruin. They would as soon marry two wives each to ensure peace in their families.

Chicago and Milwaukee Railroad.

The Board of Directors of the Illinois Division of the Milwaukee Railroad have just closed a contract with Messrs. Stone and Witt, of Cleveland, Ohio, for the entire construction of the road, with all the necessary locomotives, cars and stations—the whole work to be finished and put in operation by the close of navigation next year. The Company have also made arrangements with the Illinois and Wisconsin Railroad Company, for the right of way into Chicago on the grounds of the latter, and also for the joint occupancy of the depot property on the west side of the north branch, immediately north of Kinzie street. The contractors on the Wisconsin division of the road, Messrs. Stewart & Bishop are to have their work finished from Milwaukee to the State line as soon as the Illinois division is completed.

Scioto and Hocking Valley Railroad.

This road was completed from Portsmouth on the Ohio River to Jackson a distance of 46 miles, in August last, at a cost of about $750,000. The receipts are about $7,000 per month, with only two locomotives of small power, equal to 7 per cent. on the cost of this part of the road. The receipts for the month of December will be about $10,000. The Company have contracted for several new locomotives and necessary cars. This road when completed will extend from Portsmouth to Newark, 118 miles long, there it connects with the railroads to Sandusky City, Cleveland, Pittsburgh and Wheeling. That part of the line lying north of Jackson to the line of the Marietta and Cincinnati Railroad will be completed early next year. The residue of the line to Newark is under contract for graduation and masonry, and much of it ready for the rails, and is expected to be in operation early in June next. This road traverses one of the best mineral regions in the United States, and is of great importance to that part of Ohio.

Buffalo and Pittsburgh Railroad.

The recent action of Cattaraugus County in relation to this road, is a striking contrast to the course being pursued by the citizens of Erie toward the Erie and North-East Company.

The right of way through the County Farm of Cattaraugus has been granted to the Buffalo and Pittsburgh Railroad Company *free of charge*. The vote on the question was carried by a large majority. The Cattaraugus *Whig* says: "We regard this vote as being highly creditable to the county. By its results, the Company, for whose benefit the concession was made, and all other

railroad companies will perceive that Cattaraugus bids 'God speed' to every work of utility contemplated within her borders."

American Railroad Journal.

Saturday, December 31, 1853.

Railroad Troubles at Erie.

We have forborne any allusion to the recent disgraceful riots at Erie, in the hope that law and order would soon resume their sway, proving the excesses to be one of those accidents, which occasionally happen in the best ordered communities, and which in the main reflect no lasting stain either on our laws, or upon the moral sentiment of society. In this hope we have been most grevi ously mistaken. The outrages upon private property at Erie, continue, with scenes of violence and brutality that would disgrace savages. The courts have at last interfered, but the rioters conscious it would seem, of being sustained by the public sentiment of the State, to shield them from punishment, continue their reckless destruction and violence.

The facts of the case are simply these:—The owners of the Erie and North East Railroad, extending from Erie to the State line of New York, determined to change the *gauge* of the road, (which is six feet,) so as to conform to the two connecting roads, extending to Buffalo, and Cleveland, which were of four feet ten inches gauge.—The necessity of breaking *bulk* both at Erie and the State line, proved a serious inconvenience to all concerned, without the least compensating advantage. The legal right to make the proposed change was not questioned. The people of Erie opposed it on the ground that the delay caused at that city would be advantageous to them—that if a traveller was detained there for half an hour, he would probably spend a few penies in *refreshments* and that the transfer of freight from car to car would give employment to a large number of laborers. The Erie people therefore determined to prevent the change of gauge at all hazards, and failing to do so, to *destroy* the road. The commencement of the change was the signal for hostilities, and the Erie mob, headed by the Mayor fell upon the road, destroying everything within their reach. Not content with wreaking vengeance upon the Erie and North East Company, they have also destroyed portions of the Erie and Cleveland road, which is no party to the grievances complained of, and which has a gauge exactly in conformity with their interests and wishes. Could any palliation be offered for the atrocites committed upon the Erie and North East Company, there are certainly none for those committed against the Cleveland and Erie, which are the result of the sheerest malice, without a shadow of provocation.

Were the sentiments displayed at Erie confined to that town, the affair might be treated as of small consequence. There is no doubt, however, that the excesses committed at that city had their real cause in the supposed sympathy and countenance of the greater part of the State. The Governor has sent a letter of sympathy to the rioters, offering them his presence, in case it should be thought necessary to the preservation of their *rights*. The public press of the State, almost without exception as far as we have seen,

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of $100.

NAME OF COMPANY.		Miles open.	Capital paid in.	Funded debt.	Tot. cost of road and equipm't.	Gross Earnings for last official year.	Net Earnings for last official yr.	Dividend for do.	Price of Shares.
Atlantic and St. Lawrence...	Maine.	150	1,538,100	2,978,700	5,150,278	254,743	118,520	none	80
Androscoggin and Kennebec..	"	55	809,378	1,016,500	2,064,458	140,561	80,053	none	80
Kennebec and Portland..	"	72	952,621	29*i*,80	2,514,067	168,114	100,552	none	41
Port., Saco and Portsmouth..	"	51	1,355,500	128,884	1,459,384	208,669	.....	6	97
York and Cumberland,.....	"	20	285,747	341,100	713,605	23,946	11,256	none	24
Boston, Concord and Montreal.	N. H.	93	1,649,278	622,200	2,540,217	150,538	79,659	none	35
Concord	"	35	1,485,000	none.	1,485,000	305,805	141,836	8	104
Cheshire	"	54	2,078,625	720,900	3,002,094	287,768	55,266	5	48
Northern	"	82	3,016,634	....	....	328,782	163,075	5	51¼
Manchester and Lawrence....	"	24	717,548	....	....	....	....	6	89
Nashua and Lowell.....	"	15	600,000	none.	651,214	132,545	51,513	8	109
Portsmouth and Concord....	"	47	....	....	1,400,000	....	....	none	....
Sullivan....	"	26	....	....	673,500	....	....	none	21
Connecticut and Passumpsic..	Vt.	61	1,097,600	550,000	1,745,516	....	....	none	33
Rutland	"	120	2,486,000	2,429,100	5,577,467	495,397	266,589	none	20
Vermont Central....	"	117	8,500,000	3,500,000	12,000,000	....	....	....	14
Vermont and Canada....	"	47	1,500,000	....	1,500,000	Leased to the Vt. C		ent.	100
Western Vermont....	"	51	392,000	700,000	....	Recently	opened.	none	....
Vermont Valley	"	24	....	....	....	....		none	....
Boston and Lowell....	Mass.	28	1,830,000	....	1,995,249	388,108	130,881	7	97
Boston and Maine....	"	88	4,076,974	150,000	4,092,927	659,001	338,215	7	102
Boston and Providence..... ..	"	53	3,160,390	390,000	3,546,214	469,656	227,434	6	88
Boston and Worcester..... ..	"	69	4,500,000	425,000	4,845,967	758,819	331,296	7	102¼
Cape Cod branch....	"	28	421,295	171,800	633,906	60,743	30,056	2	45
Connecticut River....	"	52	1,591,100	193,500	1,801,946	229,004	72,028	5	55
Eastern....	"	75	2,850,000	500,000	3,120,391	488,793	241,017	7	91
Fall River....	"	42	1,050,000	none.	1,050,000	229,445	99,589	8	106
Fitchburg....	"	66	3,540,000	112,305	3,623,073	574,574	232,787	6	96
New Bedford and Taunton.. ..	"	20	500,000	none.	520,475	164,230	43,950	7	117
Norfolk County....	"	26	547,015	819,743	1,245,927	67,251	23,415	none	60
Old Colony....	"	45	1,964,070	282,300	2,293,534	322,213	101,510	none	90¼
Taunton Branch....	"	12	250,000	none.	307,136	137,406	24,399	8	....
Vermont and Massachusetts..	"	77	2,140,536	1,001,500	3,203,333	218,679	18,648	none	13¾
Worcester and Nashua..... ..	"	45	1,134,000	171,210	1,321,945	162,109	66,900	4	61
Western	"	155	5,150,000	5,319,520	9,953,759	1,339,873	683,194	6	96
Stonington....	R. I.	50	....	467,700	....	240,572	110,892	....	66
Providence and Worcester...	"	40	1,457,500	300,000	1,731,498	253,690	139,514	6	100
Canal....	Conn.	45	922,500	500,000	1,400,000	....	....	4	65
Hartford and New Haven....	"	72	2,350,000	800,000	3,150,000	639,529	294,269	10	118¼
Housatonic....	"	110	....	....	2,500,000	329,041	168,902	none	....
Hartford, Prov. and Fishkill..	"	50	....	....	In progres	69,629	....	none	....
New London, Wil. and Palmer	"	66	558,861	800,000	1,511,111	114,410	....	....	39
New York and New Haven...	"	61	3,000,000	1,641,000	4,978,487	806,713	428,173	7	102
Naugatuck	"	62	926,000	440,000	....	....	....	8	....
New London and New Haven.	"	55	750,500	650,000	1,380,610	Recently	opened.	none	52
Norwich and Worcester.....	"	54	2,121,110	701,600	2,596,488	267,561	116,965	4	58¼
Buffalo and New York City..	N. Y.	91	900,000	1,550,000	2,550,500	Recently	opened.	none	85
Buffalo, Corning and N. York.	"	132	....	....	In progres	....	....	none	65
Buffalo and State Line.....	"	69	879,636	872,000	1,921,270	Recently	opened.	....	130
Canandaigua and Niagara F..	"	50	....	....	In progres	....	....	....	....
Canandaigua and Elmira.....	"	47	425,509	582,400	987,627	76,760	39,360	none	68
Cayuga and Susquehanna....	"	35	687,000	400,000	1,070,786	74,241	23,496	none	....
Erie, (New York and Erie)...	"	464	10,000,000	24,003,865	33,070,863	3,537,766	1,691,623	7	79¼
Hudson River.....	"	144	3,740,515	7,046,395	10,527,654	1,063,659	338,783	none	68
Harlem	"	130	4,725,250	977,463	6,102,935	681,445	324,494	5	56
Long Island....	"	95	1,875,148	516,246	2,446,391	205,068	44,070	none	30
New York Central	"	504	25,085,600	10,778,823	33,859,423	....	....	....	114
Ogdensburgh (Northern).....	"	118	1,579,969	2,969,760	5,133,834	480,137	195,847	none	29
Oswego and Syracuse..... ..	"	35	350,000	201,500	607,803	90,616	43,609	4	70
Plattsburg and Montreal....	"	23	174,042	181,000	349,775	Recently	opened.	none	....
Rensselaer and Saratoga....	"	25	610,000	25,000	774,495	213,078	96,737	....	....
Rutland and Washington.....	"	60	850,000	400,000	1,250,000	Recently	opened.	....	....
Saratoga and Washington....	"	41	899,800	940,000	1,832,945	173,545	135,017	none	30
Troy and Rutland	"	32	237,690	100,000	329,577	Recently	opened.	....	33
Troy and Boston.....	"	39	430,936	700,000	1,043,357	Recently	opened.	none	....
Watertown and Rome.....	"	96	1,011,940	650,000	1,693,711	225,152	116,706	8	92
Camden and Amboy.....	N. J.	65	1,500,000	....	4,327,498	1,388,385	478,413	10	145
Morris and Essex.....	"	45	1,022,420	128,000	1,220,325	149,941	79,252	7	....
New Jersey....	"	31	2,197,840	476,000	3,245,720	603,942	316,259	10	131
New Jersey Central.....	"	63	986,106	1,500,000	2,379,880	260,899	124,740	3	....
Cumberland Valley.....	Penn.	56	1,184,500	13,000	1,265,143	118,617	76,890	5	....
Erie and North East.....	"	20	600,000	....	750,000	Recently	opened.	....	125
Harrisburgh and Lancaster...	"	36	880,100	713,227	1,702,523	265,327	106,320	8	52
Philadelphia and Reading....	"	95	6,656,332	10,427,800	17,141,987	2,480,626	1,251,987	7	79
Philad., Wilmington and Balt.	"	98	3,850,000	2,403,276	6,813,839	667,785	388,501	5	80

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of $100.

NAME OF COMPANY.		Miles open.	Capital paid in.	Funded debt.	Tot. cost of road and equipm't.	Gross Earnings for last official year.	Net earnings for last official yr.	Dividend for do.	Price of shares.
Pennsylvania Central	Penn.	250	9,768,155	5,000,000	13,600,000	1,948,827	617,625	....	94
Philadelphia and Trenton	"	80	....	....	....	....	....	....	....
Pennsylvania Coal Co	"	47	....	....	....	....	....	....	....
Baltimore and Ohio	Md.	381	9,188,300	9,827,123	19,542,307	1,325,563	615,384	7	102¼
Washington branch	"	38	1,650,000	....	1,650,000	348,622	216,237	8	57½
Baltimore and Susquehanna	"	57	....	....	....	413,673	152,536	....	....
Alexandria and Orange	Va.	65	....	....	In prog.	....	....	....	..
Manassas Gap	"	27	....	....	In prog.	....	....	....	....
Petersburgh	"	64	769,000	173,867	1,168,928	227,593	72,370	7	77
Richmond and Danville	"	73	1,372,324	200,000	In prog.	....	....	....	70
Richmond and Petersburgh	"	22	685,000	....	1,100,000	122,861	74,113	none	40
Rich., Fred. and Potomac	"	76	1,000,000	503,006	1,531,238	254,376	113,256	7	100
South Side	"	62	1,357,778	640,000	2,106,467	62,762	....	....	....
Virginia Central	"	107	1,400,100	446,036	In prog.	176,485	74,902	none	61
Virginia and Tennessee	"	60	3,000,000	1,500,000	In prog.	....	....	none	98
Winchester and Potomac	"	32	180,000	120,000	416,532	89,776	....	12	....
Wilmington and Raleigh	N. C.	161	1,338,878	1,134,698	2,965,574	510,038	153,898	6	....
Charlotte and South Carolina	S. C.	110	....	....	....	....	....	....	....
Greenville and Columbia	"	140	1,004,231	300,000	In prog.	....	....	....	....
South Carolina	"	242	3,858,840	3,000,000	7,002,396	1,000,717	609,711	7	125
Wilmington and Manchester	"	....	....	....	In prog.	....	....	....	....
Georgia Central	Ga.	191	3,100,000	306,187	3,378,132	945,508	508,625	8	115
Georgia	"	211	4,000,000	1,214	....	934,424	456,468	7½	....
Macon and Western	"	101	1,214,283	168,000	1,596,283	296,584	153,697	9	100
Muscogee	"	71	....	....	In prog.	....	....	....	....
South Western	"	50	586,887	150,000	743,525	129,395	71,535	8	....
Alabama and Tennessee River	Ala.	55	....	....	In prog.	....	....	....	....
Memphis and Charleston	"	93	776,259	400,000	In prog.	....	....	....	....
Mobile and Ohio	"	33	879,868	....	In prog.	....	....	....	....
Montgomery and West Point	"	88	688,611	....	1,330,960	173,542	76,079	8	....
Southern	Miss.	60	....	....	....	....	....	....	....
East Tennessee and Georgia	Tenn.	80	835,000	541,000	In prog.	....	....	....	....
Nashville and Chattanooga	"	125	2,093,814	850,000	In prog.	....	....	....	....
Covington and Lexington	Ky.	38	1,430,150	900,000	In prog.	....	....	....	....
Frankfort and Lexington	"	29	357,218	....	584,902	87,421	44,250	....	70
Louisville and Frankfort	"	65	....	....	....	....	....	....	80
Maysville and Lexington	"	....	....	....	....	....	....	....	....
Cleveland and Pittsburgh	Ohio.	100	1,289,450	1,371,000	In prog.	....	....	....	....
Cleveland, and Erie	"	95	....	....	2,963,756	194,429	123,306	6	93
Cleveland and Columbus	"	135	3,027,000	408,200	....	....	....	....	....
Columbus, Piqua and Indiana	"	46	....	....	3,655,000	777,793	483,454	12	124
Columbus and Lake Erie	"	61	....	....	2,000,000	....	....	....	80
Cincinnati, Ham. and Dayton	"	60	2,100,000	500,000	....	....	....	....	....
Cincinnati and Marietta	"	....	....	....	2,659,653	321,793	200,967	....	106
Dayton and Western	"	40	310,000	550,000	In prog.	....	....	....	72
Dayton and Michigan	"	20	....	....	925,000	Recently	opened.	....	80
Eaton and Hamilton	"	36	....	....	In prog.	....	....	....	....
Greenville and Miami	"	31	....	....	....	....	....	....	60
Hillsboro	"	37	....	....	....	....	....	....	....
Little Miami	"	84	2,370,784	....	In prog.	....	....	....	....
Mansfield and Sandusky	"	....	900,000	1,000,000	2,634,157	526,746	314,670	10	113
Mad River and Lake Erie	"	167	2,387,200	1,767,000	1,855,000	....	....	....	....
Ohio Central	"	57	....	....	4,110,148	540,518	113,401	....	95
Ohio and Mississippi	"	....	....	....	In prog.	....	....	....	90
Ohio and Pennsylvania	"	187	1,750,700	2,450,000	"	....	....	....	87
Ohio and Indiana	"	....	....	....	....	Recently	opened.	....	....
Scioto and Hocking Valley	"	....	....	....	In prog.	....	....	....	....
Toledo, Norwalk and Clevel'd	"	147	552,000	800,000	"	....	....	....	....
Xenia and Columbus	"	54	1,092,137	119,500	1,317,140	Recently	opened.	....	92
Evansville and Illinois	Ind.	31	....	....	1,257,714	237,506	135,363	15	116
Indiana Central	"	....	....	....	In prog.	....	....	....	....
Indiana Northern	"	131	....	....	"	....	....	....	90
Indianapolis and Bellefontaine	"	88	....	....	"	Recently	opened.	....	115
Lawrenceburg and Ind	"	90	....	....	"	....	....	....	166
Lafayette and Indianapolis	"	62	....	....	In prog.	....	....	....	77
Madison and Indianapolis	"	88	1,650,000	750,000	....	Recently	opened.	....	82
Peru and Indianapolis	"	40	....	....	2,400,000	516,414	268,075	10	70
Terre Haute and Indianapolis	"	72	632,387	663,100	In prog.	....	....	....	65
Rock Island and Chicago	Ill.	....	....	....	1,353,019	105,944	71,446	4	108
Chicago and Mississippi	"	185	2,400,000	4,000,000	4,600,000	....	....	....	....
Illinois Central	"	....	....	....	....	....	....	....	....
Galena and Chicago	"	92	1,932,361	500,000	In prog.	473,548	286,152	....	136
Michigan Southern	Mich.	315	2,800,000	2,629,000	6,430,246	592,187	293,046	....	122
Michigan Central	"	282	4,000,000	4,067,896	8,614,198	....	....	8	126
Pacific	Mo.	88	1,000,000	none.	In progres	Recently	opened.	....	108

give aid and comfort to the rioters. As a state of feeling which prevails would render the conviction of the offenders impossible, a direct license and encouragement is thus held out to rapine and violence.

The cause that lies behind all others is the jealousy and envy felt, particularly by Philadelphia at the rapid growth, and the prosperity of the City of New York, which is regarded as the great rival of the former. As a means of holding this City in check, the public press of Philadelphia have always contended, that as the State of Pennsylvania extended from Lake Erie to *Tide* water, she should interpose her position as a barrier between New York and the West, and annex such conditions to a right of way over her territory, and would discriminate in favor of the interests of the State, and of the City of Philadelphia, and against those of New York. It was in pursuance of this policy that a tax of $10,000 per year is exacted of the Erie Railroad Company for the privilege of passing through a small corner of that State. The jealousy referred so colored the vision of our neighbours, that in nearly every Railroad movement in northwestern Pennsylvania and throughout the West, was seen some far reaching scheme, for the aggrandizement of this City at the expense of Philadelphia. Of this character was the recent attempt to change the gauge at Erie, against which measure, the only effect of which would be to cheapen the cost of transportation, the sentiment referred to has at last broken out in the form of an organized mob!

The people of Erie are not only acting in defiance of all law, but those of the State generally, have themselves fabricated the very grounds of their complaints. New York neither entertains, nor ever has entertained, any scheme for her own aggrandizement at the expense of other cities. Her citizens feel too conscious of the strength of her position to be sensible to any such appeals, and regard no project with any favor but for the money that can be made out of it. So far from having any schemes hostile to Philadelphia, she has, most generously, furnished the means for constructing all the roads entering Pennsylvania from the west, without which, Philadelphia would be as isolated from the trade of that great region, as far as railroads are concerned, as is the eastern shore of Virginia. Left to herself, Philadelphia enterprise would have terminated at *Pittsburg*. All beyond would have remained a "*terra incognita*," but for *New York*. New York furnished nearly *all* the means for the construction of the Ohio and Pennsylvania Railroad, which in a commercial point of view, is a *part* of the Pennsyvania Central Railroad. While that work was in progress, its able President, Gen. Robinson, told us, that had he been compelled to rely upon Philadelphia for the paltry sum of $200,000 he must have abandoned the road. If New York has such fearful designs upon Philadelphia as she is accused of having, why did she construct the road of all others, the best calculated to build up that city, at her own expense; a work which the sluggishness of the former city would have left untouched to the present moment? Why does she furnish means for the construction of the Cleveland and Pittsburgh, Pittsburgh and Steubenville, Steubenville and Indiana, Ohio Central, and Marietta and

Cincinnati, all Philadelphia roads, and which will bring that city in connection with every portion of the west, and from which, but for what New York has done, she would have been entirely cut off!

New York has no *favorite* projects. She regards all roads as *New York* roads, She looks upon the Pennsylvania Central as much a *New York's* work, as is the Hudson River road. It may be great folly for her to entertain such exalted ideas, but such is the *fact*. Her citizens believe that no road in the United States can be built without benefitting them. So strong is this conviction that the effect of a proposed road upon the trade of his city, is a question never raised, even by the *Press*. The Philadelphia roads receive just as favorable notices as do our own. The great bugbear with which the people of that city are constantly frightening themselves, have an existence only in their imagination, though it seems constantly to haunt them, and supply no small portion of the material which the Press of that city serve daily to their readers.

No measures to which the Pennsylvanians may resort can prevent such western people as choose to trade in New York, from going there. They may throw anoyances in their way, but they cannot stop them. Such being the fact, the disgraceful proceedings at these can only recoil upon the authors of them. We think they have already inflicted a serious injury upon the credits of the Companies of that State. It must be remembered that capitalists throughout the world are interested in the pending controversy, and are watching the result What will be the conclusions as to the safety of investments in Pennsylvania, if, for every petty grievance, a mob turns out, and by unanimous consent, and destroys their property? Why may not the same thing happen to the Sunbury and Erie road, which is charged with fomenting the Erie troubles. This Company may be lighting a torch which may consume themselves.—Pennsylvania has already suffered severely for her previous *default*. Let her not add a still deeper stain, by *destroying* the *property* of distant creditors.

The N. O. Picayune says in regard to the Tehuantepec route to the Pacific:

"We have great satisfaction in announcing that the Sloo Tehuantepec company have now completed their final arrangements for the opening of this important route to the Pacific. Mr. M. Abrams, the secretary of the company, has just returned from the north, and brings with him the final contracts signed and sealed, by which the house of Sykes, DeBergne & Co., of England, obligate themselves within one year to construct a plank road across the Isthmus, and to put the same in complete running order, with stage and coach accommodations, &c., and also to place three river steamers on the route. A contract has likewise been entered into with the same parties, for the construction of a railway to be commenced within four months after the completion of the plank road, and to be thoroughly opened and finished within three years thereafter, the road to have a double track, and a six foot guage, with all the necessary cars, equipments, machinery, &c.

"The house that has assumed these responsible engagements is of high standing and great wealth. They have not only assumed the payment of the $600,000 due as a bonus to the Mexican Government, and which had been advanced by certain parties for account of Mr. Sloo, but they have also agreed to take the bonds of the company in payment of the contracts entered into for the opening of the Tehuantepec route. The company have accordingly issued Sterling bonds in sums of £125 and £250, bearing seven per cent interest, the former inconvertible and the latter convertible into stock on the completion of the road. The subscription books to the stock will, as we understand, not be reopened here, but according to the original agreement with the Mexican Government, twenty thousand shares of stock were reserved for Mexican citizens, and in due time books will be opened in the city of Mexico for supplying shares to that amount. The favorable negotiations which the company has succeeded in effecting abroad, will induce parties in Mexico to absorb this stock very rapidly. A small amount of bonds may subsequently be offered in this market for the benefit of those who may desire to have some interest in this magnificent undertaking.

"Engineers have already arrived here, and will proceed forthwith to the Isthmus, in order to commence the necessary works, and to ensure the completion of the road within the time prescribed.

When talking about constructing Railroads in the Tropics, within a limited time, and for a given sum, parties only decieve themselves and the public. *Certainly* in either of the above particulars is out of the question. In the State of New York for instance, *certain* results may be productive of a given amount of money, or number of laborers. Upon the *Isthmus*, this certainty becomes the wildest conjecture, as the experience of the Panama Company has fully proved. The public, when they hear about contracts being made to build any work, either railroad or canal, in their part of the country at low cost, and within a short time may pay just as much attention to them as they do to the whistling of the wind—no more.

Kentucky.

Covington and Lexington Railroad.—We learn from the Cincinnati *Commercial* that the track layers on this road are now at work eleven miles beyond Falmouth, about fifty miles from Covington, and are progressing at the rate of half a mile per day. Should the winter prove a mild one, of which there is every indication, it is confidently hoped to complete the whole route to Lexington by next April. Thus far, the work has given great satisfaction, and the profits are much larger than the company anticipated. When it shall have reached Lexington, which is perhaps one of the greatest inland agricultural depots in the west, we may reasonably look for a vast increase in the earnings of the road, and a new and very profitable trade opened with Cincinnati.

Montgomery and Pensacola Road.

The Pensacola *Gazette* of the 3d inst., says that the President of this road has just finished a reconnoisance of that portion of the road lying in Florida. He reports favorably of the route, the only obstacle of any moment, a 20 mile descent from the ridge on which the road begins, has been overcome, the grade being 24 feet to the mile.—The Florida portion of the road is 42 miles in length. The *Gazette* adds:

The survey through Alabama has been completed and the report of the Chief Engineer is looked for in a very short time, when immediate steps will be taken to put the whole road under contract. The entire route to Montgomery is very favorable, the heaviest grade being forty feet to the mile, and the whole length only 7 miles greater than an air line. Mr. Gray, of Georgia, between whom and the President a correspondence has been going on, is expected here in a few days. Mr. Gray is an eminent Railroad contractor, has been engaged for many years in the railroads in Georgia and is desirous of taking the contract on this road for the grading and superstructure; information has been received from Mongomery that the Directors there are resolved to put their end of the road under contract as soon as the estimates are completed.

Population of Cleveland.

The census of Cleveland has just been taken, which shows the following result:

	Pop. 1850.	Pop. 1853.
1st Ward	7,837	6,395
2d "	5,890	10,277
3d "	3,603	4,339
4th "		10,203
Colored Pop	211	405
	17,041	31,219
Ohio City	6,365	9,992
	23,407	41,206
		23,406
Increase in three years		17,800

Cincinnati and Cleveland Straight Line.

We notice by the Ohio papers that a new line of railroad, a *straight* line, between Cincinnati and Cleveland is seriously proposed. At the head of the enterprize is the Hon. Thos. Corwin, late Secretary of the Treasury, who, we see, has been "speaking" at various points on the proposed route, in favor of the project.

Of course, there is no objection to a straight line between the above cities, except so far as the *public* would be the losers thereby. There are already *two* lines of railroad between Cincinnati and Cleveland, either of which furnish all the accommodations required. At least we never heard any complaint from any quarter. They are not *air* lines, but it does not hold that they are not the *shortest* lines, notwithstanding. The Erie Road is some 75 miles longer than a *straight* line between this city and Buffalo, but is the shortest *practicable* line, and those who would attempt to improve it, by making a *shorter* one, would *increase* the distance as measured by time and expense of transportation as much as they would *diminish* the actual length of line. So too with the Baltimore and Ohio Railroad. It takes the *short* cut to the Ohio, though by a much longer *route* than a *straight* line. The *shortest* is an *equated* one, the elements in the calculation being lineal distance, grades and curves. We see no reason to doubt that the line made up of the Little Miami and Cleveland and Columbus is not the short line between Cincinnati and Cleveland; the *straight* line, if you please, especially if Columbus be a necessary point in the route. If not, then the bend made to accommodate that city will be cut off by the Springfield and Delaware Road, which, with the above, will make a much shorter line between the above cities than can be constructed upon *any* route. This new line is about being opened, and will supply every needful accommodation between the above cities, and with the roads already in operation, to the country traversed.

In face of all these roads, to attempt to construct a new *through* route is utterly preposterous. To propose it seriously is to impeach one's own

sanity. There is not a man in or out of Ohio, that would, upon reflection, lend one cent to the scheme. All money spent upon will be wasted, and unless its projectors desist, they will do something worse than lose their money.

There may be points on the proposed route, where short branches, connecting such with the great routes in operation, may be advisable, but these can be constructed without the necessity of raising the question of a *new* through route.

Inclined Planes for Canals.

In a recent number of the Journal a description was given of the Newark Incline of the Morris Canal. The success with which the engineer, W. H. Talcott, Esq., adapted this direct mode of overcoming the rise and fall of artificial navigation attracted, at once, the attention of those engaged on other works, in need of similar expedients. The Monkland Canal, at Blackhill, near Glasgow, Scotland, overcomes an elevation of ninety-six feet within less than one-fourth of a mile. To overcome the ascent in the usual manner would require twelve locks, the cost of which could not be much less than £50,000, or about $250,000;—while the time of passage, averaging from two to three hours for each boat, would be a serious obstacle in the operation of a canal passing, in some seasons, over fifty boats in a day. The supply of water necessary for locks was a matter involving great difficulty, and towards the close of the year 1849, two years after the successful completion and operation of Mr. Talcott's planes in our own country, Mr. James Leslie, engineer, of the Monklaud canal, commenced building an inclined plane. In July, 1850, the work was completed and in action. A paper was read by the Engineer, April, 28th, 1851, before the Royal Scottish Society of Arts, giving a description of the construction of the work, and from a reprint of which we gather the following general facts.

There are two lines of rails on the incline, a caisson running on each, acting as counterpoises to each other, and thus reducing the amount of tractive power required.

The two caissons are constructed of boiler plate, ⅜ and 5-16 inch thick, riveted together. They are each strengthened by thirty ribs of T iron, and are set on a wrought iron carriage, strongly framed and braced, and raised up at the lower end, so as to keep the caisson level.

The caissons are seventy feet long, or just the extreme length of the boats including the rudder: 13 feet 4 inches wide, and 2 feet 9 inches deep, exclusive of wash-boards to keep the water from splashing over.

The water is only meant, however, to be 2 feet deep, that being sufficient to float the deepest empty boat. The cross section of the caisson is, as nearly as may be, taken from the mould of the boats, with a hollow space for the keel, so as to contain as little superfluous water as possible.—Each caisson has ten pairs of wrought iron flanged wheels, similar to those of an ordinary railway carriage, whereof eight pairs are of three feet diameter, one pair 2 feet 8 inches diameter; and, in order to keep the caisson as low as possible above the rails, the uppermost pair is only eighteen inches diameter.

There are upright timber fenders at the sides of the caissons for guiding the boats, and for fixing the sluice-gearing, framed and bound across the top, so as to give greater strength. The sluices are counterbalanced, and are worked each by two racks and pinions. The weight of the carriage, caisson and water, or water and boat, varies from 70 to 80 tons.

The gauge of the railway is seven feet, and the distance between the centers of the two lines of rails is 18 feet 3 inches. The gradient is 1 in 10; and the height from surface to surface of water, being, as before stated, ninety-six feet, and the length of the carriage 70 feet, the whole length of the incline requires to be 1030 feet; but an additional length of ten feet has been allowed as a provision for the case of the water being very low in the lower reach, and, consequently, the whole length of the incline is 1040 feet.

The rails are 65 lbs. to the yard, with flat soles, and are screwed down to longitudinal sleepers, These are of half logs where the ground is solid, laid on continuous stone blocks with cross-ties 15 feet apart; but are of whole timbers with cross bearers, resting on piles twelve feet apart, where the ground is made up and soft. There is a cast iron ratchet plate along the outside of each rail, also screwed down to the longitudinal sleeper, and as a means of safety in the event of anv accident befalling the ropes or machinery, there are palls attached to the carriages, working constantly into the teeth of the ratchets while the caisson is ascending, and ready to drop into them when descending, the instant the tension is taken off the rope.

The motion is given by two coupled high pressure steam engines, of 25 horse power, each, with horizontal cylinders. This is a much greater power than is needed during a greater part of the transit; but it is nearly all required at the time when the descending caisson is entering the water and, so losing its gravity, ceases to act as a counterpoise, in consequence of which the engines have for a short distance, to pull up nearly the whole weight of the ascending caisson, water and boat.

There is a double friction drag on the fly wheel, acted on by the piston rod of a small steam cylinder, by means of which the machinery may be speedily stopped and held on.

A pinion on the crank shaft outside of the engine house, two feet four and a half inches in diameter, drives a spur wheel on the lying shaft of seven feet nine inches diameter, having a friction wheel in its interior, which, for the sake of safety, and of preventing shocks, is made to slip when any unusual resistance is met with. The introduction of this friction wheel, which is similar to that commonly used in dredging machines, was suggested by Messrs. Yule and Wilkie, the contractors for the machinery and is a decided improvement.

A pinion, two feet ten and a half inches, on the lying shaft, drives a spur wheel of ten feet seven inches on the drum shaft, which is farther down the incline, being on the left hand line of rails in looking down, or the further side from the engine house. This spur wheel drives another similar wheel on the drum shaft which is uppermost, and on the right hand line of rails looking down, or the side nearest the engine house. These shafts are all of wrought iron.

It is necessary to have the two drums on separate shafts, so as to move in opposite directions, in order that the one may coil and the other uncoil the rope at the same time, both by the upper side, otherwise another drum or pulley would have been required to bring up the rope from the lower side of one of the drums. The drums, or rope rolls are sixteen feet in diameter, four feet broad, and make one turn nearly for every twelve strokes of the engine; so that, while the engines are going at their usual speed of forty strokes (though they often go considerably faster,) the caissons are travelling at the rate of about two miles per hour, and the time occupied in ascending or descending is between five and six minutes

This arrangement of caissons and driving gear, and the application of steam power, although more complicated and expensive than that of the planes in use on the Morris canal, and with the advantage possessed by the latter, of a sufficient supply of water, far from being as economical in operation, gives, nevertheless a great superiority over any other mode of transferring the boats from one level to another.

The financial prosperity of the Monkland canal has been so much enhanced by the combined influence of these improvements and the developement of the mineral district for which the canal is the outlet, that the original £100 shares, down at one time to £5 or £7, afterwards rose to be worth about £3,200.

Mr. Leslie states the total cost of the incline, including land, as £13,500, more than three times the cost of the first 56 feet plane, built on Talcott's plan, on the Morris Canal. From the 20th of March to August 23d, 1851, there were passed over the incline 5,227 boats up, and 225 down, making a total of 5,452. The longest days' work was ten hours, and the greatest number of boats passed in a single day was 55. Rather a singular effect, and one which it may be worth noticing, is produced in the frequently occurring cases of the boats being taken up, for the sake of lightening the load, with rather less than the full depth of water in the caisson, which is due to the level of the canal, or when the upper reach of the canal is over-full. On the opening the two gates or sluices, after the caisson has been pressed close to the mouth of the canal, a rush of water takes place from the canal into the caisson to level the surface, and this water being stopped by the after-end of the caisson, recoils, and forms a wave in the opposite direction, which, striking the stern of the boat, drives it with considerable impetus out of the caisson into the canal, without any help being required from the horse. This result, which was quite unlooked for, considerably expedites the working of the incline.

On the whole, American ingenuity, after receiving the credit due to the general idea of the manner in which the incline is worked, can reject many of the modifications applied by the Scotch engineer, as tending only to increase both the expense of construction and operation. In comparing the expense of the applications already made in each country, it must be remembered that the capacity of the American planes is more than double that of the other. The American plane combines greater simplicity of driving gear; equal power of control; greater facility in entering and clearing the boat; reduces and equalizes the whole load drawn, and reduces very much the expense of driving power and attendence. It is just, however, to observe that on the Morris and Lehigh

canals the boats were adapted to the section truck drawn over a summit out of the canal, by which there was no necessity of especial provision against straining the boat.

The American adaptation of the inclined plane to canals, possesses, in an eminent degree, the distinguishing traits of originality and simplicity.

J. C.

Pacific Railroad.

Hon. Wm. H. Seward has introduced into the Senate, a Bill, of which the following is a copy, providing for the construction of a Railroad to the Pacific.

A BILL to Provide for the Construction of a Military and Postal Railroad through the Territories of the United States lying between the Atlantic States and the State of California:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled—That a good and substantial first class double track Railroad may and shall be constructed throughout the Territories of the United States north of the fortieth parallel of North latitude, from some point in the western boundary of some of the Atlantic States west of the Mississippi to some point in the eastern border of the State of California. The location and route of such railroad shall, within one year from the date of the contract hereinafter mentioned, be fixed and determined by the company who shall, in manner hereinafter mentioned, contract with the United States for the construction of the same. The public land necessary for the bed of such road, of a width to be determined by the Secretary of War, is hereby ceded and granted to the said company for the period that they shall exist and continue to work and operate such road in conformity to the act. The said railroad shall be commenced within eighteen months from the date of such contract, and shall be completed within five years thereafter, and one-fifth part thereof, having relation to the estimated cost of the entire construction and equipment thereof, shall be completed within each of the said five years. The road may be constructed by any company or association who, having been duly incorporated by the Legislature of any of the United States with powers for that purpose, shall obtain the contract with the United States hereinafter mentioned. The Secretary of War shall immediately after the passage of this act issue and publish in each of the cities of the United States for the term of —— weeks, a notice inviting sealed proposals for the construction of the said railroad according to the conditions and provisions of this act, and at the expiration of that time the proposals shall be opened, and the said Secretary shall then award and make a contract of that date for the construction of the said railroad to and with the company who shall have proposed to contract the same upon the terms most favorable to the United States according to the provision of this act, and shall comply with the said provision in regard to the execution of the contract, The said contract shall bind the United States to pay the said company the sum so bid by the said company, being the lowest sum bid by any company complying with the provision herein contained, in the manner and at the times hereafter mentioned, in money or in five per cent. stock of the United States, redeemable after twenty years as the pleasure of the United States. The company who shall so contract shall, when executing the contract, deposit with the Treasurer of the United States in money or in State stocks, or in stocks of the United States, at par value, five millions of dollars as security for the performance of the contracts. They shall receive to their own use she interest on such moneys and stocks, provided that the United States will pay no more interest thereon than the rate of interest which the said stocks bear, and which shall actually be received in case of State stocks.

Whenever the company shall fail to carry on the construction and equipment of said road as is herein before provided, they shall forfeit to the use of the United States one hundred thousand dollars of the moneys and stocks so deposited for every month such default shall continue. When the work shall have been completed within the period before mentioned, to the satisfaction of the Secretary of War, then the moneys or stocks so deposited, or the portion thereof remaining after such forfeitures, shall be repaid and redelivered to said company. The company constructing the said railroad shall within the said period of five years fully and adequately equip the same and put it into operation. They shall enjoy to their own use, for fifty years, the profits and emoluments of the said road, but they shall nevertheless at all times transport the mails, the troops, and the military and naval stores and munitions of war of the United States at reasonable rates, to be determined by the Department requiring such transportation, and Congress shall have the right at any time to reduce the tolls and fares to be charged for passengers and freight, if they shall think necessary, so, however, as to allow always a profit of ten per cent, upon the actual investment of the company, and the United States may also, by an act of Congress, resume the said road, and all the franchises hereby granted, on paying to the said company the moneys which they shall have actually expended in making and equipping said road, exclusive of the moneys and stocks received from the United States, with ten per cent. interest per annum thereon. The company contracting for the construction of the said railroad shall expend thereon actually and in good faith one million of dollars of its own moneys before it shall be entitled to receive any money from the United States. The whole amount of the probable cost of the said road shall be ascertained and certified by the chief of the Topographical Bureau of the United States, and when such sum of one million of dollars shall have been so expended by the company to the satisfaction of the Secretary of War, then the Treasurer of the United States shall, on the order of the Secretary of the Treasury, pay to said company such sum as in relation to the whole sum to be paid by the United States shall bear the same proportion as one million of dollars to be expended by the company shall bear to the whole amount of the estimated cost of the said railroad, exclusively of the moneys to be paid by the United States.

SEC. 2.—And be it further enacted, that the Secretary of War shall set apart and lay out into village and city lots sufficient plots of ground, at the several places which shall be fixed upon by the Engineers of said company or by himself, for depots and stations, and any such land shall thereafter not be sold as other public lands are sold, but only on due notice and for the highest terms that can be obtained. The price of the public lands, within the distance of six miles on each side of the said road and not included within said village and city plots, is hereby fixed at two dollars and fifty cents per acre, and the price of public lands lying more than six miles and not less than twelve miles distant from the track of the said road on either side thereof is hereby fixed at one dollar and eighty-seven cents per acre.

Whatever may be said of the general merits of the above bill, there are several objections which it strikes us are fatal to its success.

The *first* is the *assumption* of *route*. Now the question of route of a railroad to the Pacific, is not one of law, but of *fact*. Mr. Seward *inverts* the ordinary mode of proceeding in such cases. Routes for railroads are not determined by the *opinions* of interested parties, but by the testimony of engineers. Mr. Seward's plan precludes all resort to such testimony; and should it turn out that no practicable route can be found *north* of the 40th parallel, *then* his bill is one providing for the *non*-construction of a railroad to the Pacific. When sensible men undertake the construction of a railroad, they very wisely send for an engineer to determine whether the work be practicable, and which of the routes proposed, is the most so. Having determined these points, they proceed accordingly. To act otherwise, would be to attempt what might be impossible, and forfeit the confidence of the public, and perchance involve themselves in ruin.

Again, the only way in which the whole country can be brought into the support of *one* route, is to show its superiority to all others. The scheme must have the *moral* strength which this superiority alone can give. To *assume* that the best route is to be found north of the 40th parallel is a direct insult to all the claims *south* of that line. To say that all such are unworthy examination, would be to array one half of the country against the *northern* line. To a conviction that a more southern route would be the better one, would be added the keen sense of injustice, which, if it did not prove fatal to every project, would keep the country in a constant ferment, which could only be allayed by the construction of *two* roads. But should such route be taken, as is manifestly superior to *all* others, the *general*, would be followed by the *particular*, assent of every section of the country.

The question of route involves two considerations; that of comparative *cost*, and adaptation to the commercial wants of the country. Where the first is balanced in several routes proposed, that of *convenience* should be allowed to determine the result; and to say that the line of convenience is *north* of the 40th parallel, is a conclusion very different from that to which the parties may come who are to build the road. It is to be presumed that such persons are much more competent judges than mere members of Congress.

Again, Mr. Seward's Bill provides for the *location* of the route within *one* year from the date of the contract; a matter which any engineer would tell him is *impossible*. This is the second "*felo de se*" which the bill contains. With the imperfect data which exists, two or three years would not suffice for the *location* of a road. Each route proposed would have to be thoroughly examined, and the best one deduced from a comparison of *all* with each other. Neither can the road be built within five years after the completion of the contract for construction; a third "*felo de se*." As the cost of the road cannot be determined within one year from the date of such contract, the chief of the Topographical Bureau cannot ascertain its *cost*, consequently the payments cannot be made in the manner prescribed—a *fourth felo de se*.

As to the minor details of Mr. Seward's Bill we are indifferent. We question however, the expediency of having the general government aid the work by direct assistance in *money*. We believe the requisite aid might be given in some other manner. Our idea is that government should encourage two or three schemes, by liberal grants of lands upon their proposed lines; say the *Northern*, or Missouri, the *Central*, or Benton's, and the more *Southern* route by *El Paso*. Let government make similar grants to the parties or companies represent ing thee three routes, and then let these partiesc presesent their claims to the *Commercial* World,; which, left free to act upon an unbassed judgement, would certainly take up and complete the *best* route, *first*. Should the result justify their onstruction, the others would follow, and we-

should thus have three routes instead of *one*, the capacity of all which, we are quite certain would fall far short of the business offering. These roads, if practicable, would secure us from an oppressive monopoly which one might inflict.

The policy last suggested would have this great effect, in satisfying *all* parts of the country. All would be impartially treated, and if either scheme could not enlist capital in its support, the inference would be that it was not feasible. The parties representing it would have only to blame themselves for taking up a project that had no merit.

There is another difficulty in the way of Mr. Seward's plan. It is generally believed that the present administration, which is to continue in power three years from March next, will *veto* any Bill giving *money* toward the construction of the road. Such being the fact, it is far better to avoid the objection by grants of *land*, provided that would accomplish the same result, then wait *four* years, for a change of parties, which after all, might bring no change of policy.

While we are glad to see this project brought up before Congress in any possible light as a means of furnishing discussion, and enquiry, we cannot help thinking it to be a very delicate subject for politicians to handle. Between their maxims and rules of contract, and the principle upon which a Railroad must rest their may be no agreement whatever.

So long as they confine themselves to the general question of it necessity, and permit these touching its route to be decided by Engineers and the commercial convenience they confine themselves to their proper sphere. If they go beyond this and descend to the details which belong entirely to other parties they may find themselves entirely out, and that they may have been going *astern* instead of acquiring popularity, or helping along this great work.

Journal of Railroad Law.

CAN A CORPORATION CHARTERED IN ONE STATE HOLD LANDS IN ANOTHER.

This question has lately been examined by the Supreme Court of Vermont upon a *quo warrants* in the case of the *State of Vermont vs. the Boston Concord and Montreal Railroad Company*. This road was chartered in *New Hampshire* to extend to the Vermont line at Wells river, and two Vermont roads have been authorized by the Legislature of that State to connect with the said Boston, Concord and Montreal road. The proprietors of the Boston, Concord and Montreal road have constructed a railroad bridge over the Connecticut river, and bought about 15 acres of land adjoining their terminus in Vermont. And there is no evidence that they mean to run cars into Vermont,—unless a junction be formed with the Vermont roads.

The question presented to the Court then, was, whether the defendants had, by having purchased the land described, in any way invaded the sovereignty of the State of Vermont.

The Court, through Chief Justice Redfield, decided this question in the negative. And the more important portion of his argument may be briefly summed up as follows:

There are some rights and franchises which foreign Corporations may exercise in Vermont, without invoking any Legislative sanction, such as the right to hold property in the corporate name, to sue and be sued by that name, to contract by a seal. If the corporation be recognized for any purposes these rights are also recognized. But to build and use a railroad, or take tolls or fare, calls for a special Legislative authority. So foreign Banks may sue in Vermont, levy their execution on land, and take land in payment of their debts, but they cannot issue notes as a currency, nor make discounts, without express permission so to do. Justice McKinley, indeed, denied to foreign Banks any title to the privileges above mentioned, but his decision was speedily reversed by the Supreme Court of the United States.

In the case of Lumbard vs. Aldrich (8 N. H. 31) it was held that a corporation created by the laws of another State, may take and hold land in New Hampshire. Parker J. says—If they may sue, they may satisfy their judgment by a levy on land, and of course, hold the land and convey it. And if they can do this they may take title by a deed in satisfaction of a debt, by agreement or upon any other consideration. The same point is decided in Silver Lake Bank vs. North, (4 Johns, Ch. R. 370,) and in cases in most other States of the Union. The like rule is declared in a multitude of Vermont cases, of which one of the most recent is the Grafton Branch vs. Doe 19th Vt. Rep. 463. Most of the bridges across the Connecticut, have been built by companies chartered in New Hampshire, but like the railroad in question their western termini are established in the soil of Vermont. And this has been acquiesced in for more than half a century. This indicates the law of Vermont in regard to the road and bridge corporations of States conterminous with Vermont, especially when it is considered that corporations have been created in the said State with express permission to connect with the Boston, Concord and Montreal road.

On the whole, the Court holds the sovereignty of Vermont to be intact, notwithstanding the doings of the defendants. Yet the railroad company have not the *paramount* right to the soil, which by virtue of the principle of what is technically called eminent domain is vested in the State. The Court will not permit any interference with the company's quiet possession of their land, upon the mere ground that they purpose to erect a bridge under a grant from the owners of the fee of the land.

Yet the company hold their 15 acres in question subject to the public reserved right of eminent domain, like all other land owners, and may be hereafter, possibly, in some measure curtailed in the enjoyment of their rights by the action of the Legislature.

NOTICES OF COMMON CARRIERS—WHEN INVALID.

The Supreme Court of Massachusetts have lately had under examination the case of *Sanford vs. the Housatonic Railroad Company*, which was brought to recover damages for injury sustained by plaintiff through careless transportation of butter, which he had sent to New York city, for sale on commission. The butter was spoilt from its proximity to the engine. The defence was that the carman of the consignee at New York gave the company a receipt for the goods, reciting that they were "received in good condition," with the following notice in the margin. *Consignees of goods by this line are requested to notice any errors in regard to the line within 24 hours, or the company will consider their responsibility ended.* No notice was given by the consignees to the company before action brought.

The Court held on exceptions—

1. That the action was justly brought in the name of the consignor, as his ownership in the butter continued after his delivery thereof to the carriers.

2. That the notice would not protect the carrier from its being vague and ambiguous.

INJUNCTION AGAINST THE ERIE RIOTERS.

The Supreme Court of Pennsylvania have granted the application of the Franklin Canal Company for a special injunction to restrain the authorities of Erie from tearing up the rails of said company in the city of Erie. The injunction being merely to stay waste; the Court will hear the city of Erie on a motion to dissolve the injunction.

FRANKLIN CANAL CO. CASE.—We annex a copy of the unanimous opinion of the Supreme Court of Pennsylvania, delivered on Saturday, in the case of the Franklin Canal Co., against the city of Erie, praying for an injunction to prevent injury to the railroad of said Company, extending westwardly from Erie toward Cleveland. It enjoins the city authorities of Erie and all acting under them, and all others, not only from doing any further damage to the road, but also from doing any thing to prevent restoring the part already torn up or injured, and from hindering in any way the free and safe working of the road.

SUPREME COURT.—Present, Chief Justice Black and Justices Lowrie and Woodward.

The following opinion was given by Chief Justice Black:

The Franklin Canal Co. vs. City of Erie and others—in Equity.

This bill prays us to enjoin the defendants from tearing up and destroying the plaintiffs' railroad. The affidavits laid before us make it impossible for us to doubt that some mischief of the kind complained of has already been done and more threatened.

Upward of a year ago the Attorney-General filed a bill against the plaintiffs, complaining that they had violated their charter, and in fraud of the law which gave them a corporate existence, had made a road to connect Buffalo and Cleveland instead of Erie and Pittsburgh. On a motion for a special injunction, the whole subject (I mean the entire merits of the case) was elaborately argued. We refused the injunction then asked for, because a positive statute stood in the way, but expressed our conviction that the complaint was well founded. On the final hearing of that cause the rights of the Commonwealth and of the Company might have been fully settled long ago. We know not who is to blame for the delay. But it is certainly very unfortunate since it has caused a state of things so much to be deplored as that described in the bill now before us. If the citizens of Erie are wronged, and have no way of getting justice besides the irregular course of taking it with their own strong hands, then the law is in disgrace. If the judicial tribunals have still the power to right them, it is folly for them to resort to measures which nothing but the sheerest necessity can ever excuse.

We are not now to decide whether a railroad built by a company in contravention of its charter, is liable to be destroyed and torn up as a public nuisance. What effect the license of the City of Erie should have is also a question which is reserved for its proper time. We have not yet said, and we will not say at present, what portion of the plaintiffs' road is open to the objection even of illegality, or whether the departure from its proper track to make a connection with the Cleve-

land, Painesville and Ashtabula Railroad put the whole work out of the protection of the law. It may, however, be a very prudent thing for those who propose to tear it up, to consider whether anything can or ought to be done beyond what is necessary to prevent it from being used as a link between Ohio and New York. For that purpose the destruction of the Western end may not be necessary, and if not necessary it will be wanton mischief. These, however, are mere suggestions which do not bind us or anybody else. Assuming that our opinion of the Company's conduct will be, on final hearing, what we expressed it to be when we refused the special injunction, and that our decree will be in accordance therewith, the precise shape of it is not by any means settled; and the people of Erie have no right to anticipate it.

Our present action on the subject is based on this principle: that in a dispute about property the thing in controversy must remain in the situation it was in when the contest began, and during the pendency of the investigation neither the parties in Court nor third persons have any power to take the cause away from the proper tribunal by any interference whatever. The Commonwealth, by her Attorney-General, has taken proper measures to have the dispute between her and the Franklin Canal Company settled. Other parties cannot step in and change the attitude and relations of the disputants. The supreme authorities of the State have the matter under consideration, and there it must remain until it is determined.—No inferior Court, no local Corporation, nor any private person can interfere. If a railroad be laid down under circumstances which make it a nuisance, every citizen has a right to abate it; but if the executive of the State appeal to this Court to determine whether it be a nuisance or not, we hold that it cannot be abated during the examination here. We will protect all parties as long as they are before us.

One of the rules of this Court requires that notice shall be given of a motion for a preliminary injunction. We think the rule a good one. It must be adhered to in all cases where it is practicable without causing a total failure of justice. But in a case like the present, where the danger of great and irreparable mischief is imminent, and where no possible injury can be caused by it to the parties enjoined, we feel it our duty not to pause a moment. We will hear the defendants with pleasure on a motion to dissolve it, and it will certainly be dissolved the moment we become convinced that the Franklin Canal Company is not using all reasonable efforts to bring the Commonwealth's case against them to a speedy hearing.

And now to-wit, December 24, 1853, upon reading the bill of complaint and affidavits filed in this case, it is ordered and decreed by the Court here that the defendants, and all and every one of them, officers, agents, workmen or servants, and all other persons whomsoever, be strictly and firmly enjoined and commanded that they do absolutely cease and desist from all the acts and doings complained of in the same bill until further order; and that for that purpose a writ of injunction be issued, upon the plaintiffs giving bond in the sum of $10,000, according to law.

Union Railroad Car Works,

PORTSMOUTH, Va.

FREIGHT, PASSENGER, BAGGAGE, EXPRESS, MARket, Coal, Lumber and Hand Cars, manufactured at this establishment of the best material, and in the most approved manner, with either PLATE or SPOKE WHEELS and AXLES, of Salisbury or other Iron. Trucks fitted up, or Wheels and Axles separately, will be furnished at the shortest notice, and shipped to any part of the United States.

Having extensive arrangements and superior facilities for manufacturing at this establishment, orders will be received and contracts made for equipping entire roads at short notice

JOHN A. GREEN.

Portsmouth, Va., December 30, 1853.

P. J. Tournadre,

Chief Engineer Vicksburg, Shreveport and Texas R.R., Vicksburg, Miss.

Locomotives for Sale.

2 Locomotive Engines and Tenders, made to order for a five feet gauge (but which are not required at present as the road is not ready to receive them)

16 inch cylinder by 20 inch stroke, 2 pair drivers. One Engine 6 ft. diameter, and the other 5½ ft. dia.—outside cylinders—have a large proportion of boiler, and are expected to be economical working engines—will be sold on very favorable terms, and are now ready for delivery. Apply to

CHAS. W. COPELAND,
7t*1 Mo. 64 Broadway.

Machinists' Tools.

THE FAIRMAN AND WILLARD MACHINE TOOL MANUFACTURING COMPANY offer for sale very superior Engine lathes, Planing Machines, Compound planers, upright drills and all other kinds of tools used in Railroad shops, upon reasonable terms.

They also manufacture Fairman's patent CAR WHEEL BORER, which is *warranted* to do MORE and *better work* than any other borer in use.

Also—all sizes Fairman's patent Universal Chuck.

Orders may be addressed to

G. W. FAIRMAN, *Agent*,
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Locomotive Engines for Sale.

TWO first class engines, adapted to a 5 foot, gauge, 22 tons weight, 16 + 20 inch Cylinders, and 5½ and 6 feet drivers, built by one of the best makers in the country. New, and offered for sale because not required by those ordering them. Enquire at the office of American Railroad Journal, 9 Spruce-st., up stairs.

Dec. 24

To Locomotive Engine Builders and Engineers.

THE Proprietors offer for rent for a term of years, with immediate possession, the splendid property, known as the BELLEVILLE IRON WORKS, situated on the Mississippi, directly opposite the City of New Orleans, and within 300 feet of the River, with which it is connected by fine wharves and landings.

The buildings are of brick, with slated roofs, and were erected in 1848 at a very heavy expense; are of a most substantial and durable character and admirably fitted for a Foundry and Machine Shops, or almost any mechanical business. They now contain a new and powerful Engine and Boiler and sufficient machinery, say, planing machines—lathes—boring machines, blacksmith's tools, &c., &c., to employ 100 mechanics, and could be put in working order in a few days. The Buildings cover a lot 300 feet square and are amply large to receive the necessary machinery for the use of 800 to 1000 workmen.

The terminus and depot of the New Orleans, Opelousas and Great Western Railroad is situated about 300 yards from the above property, which could be availed of to great advantage for the manufacture of Locomotives and Railroad work, generally as well as Steam Engines, Sugar Mills, and other descriptions of Machinery.

There are no Shops in New Orleans for the manufacture of Railroad Machinery, and as the Railroad Companies now organized in that city contemplate the construction of over 1000 miles of road,—a large part of which is already under contract,—the property now offered for lease offers a most eligible opportunity for parties desiring to contract to furnish the Engines and Machinery,—for those roads. Responsible contractors with their works on the spot would have an advantage over Northern Workshops in contracting for the Work of the Railroads terminating in New Orleans.

The Establishment and prospect of remunerating work to be secured immediately are worthy the attention of manufacturers and Engineers generally.

Applications from responsible parties will be promptly attended to, and to satisfactory parties the proprietors of the Works can offer favorable terms and arrangements.

Letters may be addressed to

R. B. SUMNER,
No. 61 Camp Street,
New Orleans;

and further information may be had by applying to Messrs. BARSTOW & POPE, Pine Street, New York.

Valuable Works on Railroads, Railway Engineering, Steam Engines, &c.

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N. York and N. Haven R. R.

NOTICE OF SUMMER ARRANGEMENTS,

Commencing Monday, May 9, 1853.

TRAINS FROM NEW YORK.	TRAINS TO NEW YORK.
7 A. M.—Accommodation to New Haven.	5.30 A.M.—Special, from Port Chester.
8 A. M.—Express for Boston, stopping at Stamford and Bridgeport.	5.00 A.M.—Commutation from New Haven.
	6.15 A.M.—Accommodation fm New Haven.
9.10 A.M.—Special for Port Chester.	8.15 A.M.—Accommodation fm New Haven.
11.30 A.M.—Accommodation for New Haven.	9.35 A.M.—Express from New Haven, Stopping at Bridgeport, Norwalk and Stamford.
3·00 P.M.—Express for New Haven, stopping at Stamford, Norwalk and Bridgeport.	1·07 P.M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.
4.00 P.M.—Accommodation for New Haven.	4.00 P.M.—Special, from Port Chester.
5.00 P.M.—Express for Boston, stopping at N. Haven.	4.00 P.M.—Accommodation fm New Haven.
5.35 P.M.—Commutation for N. Haven.	9.30 P.M.—Boston Express, stopping at Bridgeport, Norwalk and Stamford.
6.30 P.M.—Special for Port Chester.	

GEORGE W. WHISTLER, Jr., Sup't.

New Haven, May, 1853.

Stuart, Serrell & Co.,

CIVIL ENGINEERS,
Rooms 22, 24, 26 & 27,
157 Broadway, New York.

CHARLES B. STUART, DANIEL MARSH, EDWARD W. SERRELL, SAMUEL MCELROY.

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THE Field Practice of laying out Circular Curves for Railroads.—By JOHN C. TRAUTWINE, Civil Engineer—2nd edition in pocket-book form.

A new and rapid method of Calculating the Cubic Contents of Excavations and Embankments, by the aid of Diagrams.—By John C. Trautwine, Civil Engineer—with 10 Copper Plates.

Price One Dollar each—postage on the Curves Three Cents—and on the Excavations and Embankments, Six Cents.

For sale by WILLIAM HAMILTON,
Hall of the Franklin Institute,
May 4, 1853. Philadelphia.

ESTABLISHED 1796.
McAllister & Brother,

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Our Illustrated and priced Catalogue is furnished on application and sent by mail free of charge.

Nov. 19, 185

$1,000,000 LITTLE MIAMI RAILROAD COMPANY SIX PER CENT. FIRST MORTGAGE BONDS FOR SALE.

OFFICE OF WINSLOW, LANIER, & Co.,
No. 52 Wall-st., Oct. 6, 1853.

THE LITTLE MIAMI RAILROAD COMPANY offer for sale one million of their SIX PER CENT. BONDS, with coupons. Interest and principal payable in New York, the former half-yearly, 1st of November and 1st of May. They are in sums of $1,000 each, payable the 1st day of May, 1858.

These Bonds are issued under the express authority of the Legislature of the State of Ohio; and are a part of the $1,500,000 Loan authorized to be issued by a vote of the stockholders, for the purpose of raising means to make a double track; the greatly increased and increasing business of the road makes this absolutely necessary.

The Little Miami Railroad is eighty-four miles long, commencing at the City of Cincinnati and terminating at Springfield; is now in complete running order; has cost, including equipments, stations, station-houses, &c., up to this date $2,708,109 19.

This Company hold stock in the Columbus and Xenia Railroad Company to the amount of $386,000, which now commands a premium of 20 per cent. Also, in the Hillsborough Road the amount of $11,716.

The receipts of the Road have been as follows:

For the year ending Dec. 1, 1844.....	$18,623 36
For the year ending Dec. 1, 1845.....	46,327 58
For the year ending Dec. 1, 1846.....	116,052 02
For the year ending Dec. 1, 1847.....	221,139 52
For the year ending Dec. 1, 1848.....	280,085 78
For the year ending Dec. 1, 1849.....	321,398 82
For the year ending Dec. 1, 1850.....	405,597 24
For the year ending Dec. 1, 1851.....	487,845 89
For the year ending Dec. 1, 1852.....	526,746 35
The receipts from Dec. 1, 1852, to Sept. 1, 1853, 10 months were.....	544,625 59
For the same period year before.....	411,797 06
Increase in 10 months.....	$132,823 53

The position of this road, being the natural, shortest and most usually travelled route from Cincinnati and the vast country south and west of it, to the northern cities, must ever make it one of the most important and profitable lines in the country.

An inspection of a map will show its connections to be many and important. This road operates the Columbus and Xenia Road, and runs in connection with the Cleveland and Columbus Road; in fact they are now run as one line greatly to the advantage of all.

Regular annual 10 per cent. dividends have been declared since December, 1847, with an extra dividend of 5 per cent. in 1852. In 1852 two cash dividends of 5 per cent. were made.

The present surplus and reserve fund amounts to.....	$98,546 10
The mortgage covers the entire line of road, costing to date...	2,708,108 19
To be expended on double track, &c.	1,500,000 00
Value of security.....	$4,208,109 19

The security for the payment of these Bonds is one of the most ample character, being a first and only mortgage or deed of trust (excepting one of $100,000 to the City of Cincinnati) on the Company's Road, Stations, Franchises, net income, &c., to J. F. D. LANIER, Esq., of this city, in trust for the bondholders, with ample power to take possession of the Road, its real and personal estate, franchises, &c., and to sell the same to the highest bidder for cash, if default be made in payment of interest or principal. The mortgage is for $1,500,000, and cannot be increased.

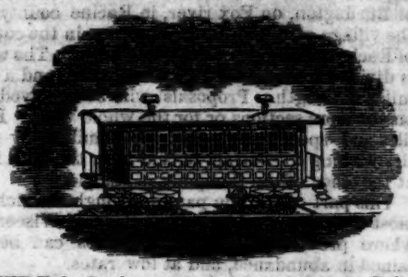
The Stock owned by the Road in the Columbus and Xenia and Hillsborough Railways will much more than pay off the $100,000 prior lien to the City of Cincinnati, and all other debts of the Company, excepting this loan of $1,500,000.

These Bonds are offered at private sale by the undersigned, Agents of the Company.

Printed statements of the affairs of the Company, and any further information relative to the securities, will be given by

WINSLOW, LANIER & CO.,
No. 52 Wall-st.

Elmira Car Manufactory.



THE Undersigned is prepared to manufacture for Railroad Companies, Passenger, Baggage, Cattle, Freight, Gravel and Hand Cars, also Baggage Barrows and Freight Trucks.

WM. E. RUTTER.

Elmira, N. Y., June 1, 1853.

The Hamilton Car Company,

ARE prepared to Contract for the Manufacture to order Rail Road Cars of every description, such as Passenger, Baggage, Freight, Dumping and Hand Cars, &c. &c.

Having ample facilities for Manufacturing at the lowest rates, and being supplied with Eastern Mechanics in every department under the Superintendance of H. P. Lanckton, who has had charge of T. W. Wason's well known establishment at Springfield Mass., for the last Six years, we can guaranty ours to be equal in style and quality to any manufactured.

Car Manufacturers and Rail Road Companies Supplied with Car wheels from the most approved patterns at the lowest prices. Castings of all kinds for Cars, Rail Road Bridges, &c. made to order at short notice.

Orders Respectfully Solicited.

Address, HENRY SIZER, *Agent*,
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Railroad Car Works.

THE Undersigned are prepared to manufacture for Railroad Companies, Passenger, Baggage, Cattle, Freight, Gravel and Hand Cars, also Baggage Barrows and Freight Trucks.

F. HUNGERFORD & CO.

Maysville, Ky., Sept. 29, 1853.

Hufty's

Engineers, Architects and Draftsmen's

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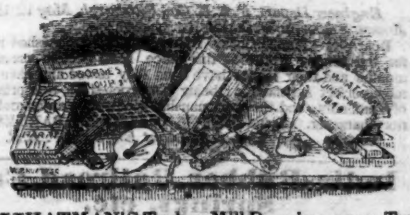

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All goods packed with care, and forwarded to any part of the United States.

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Successor to H. L. Lipman,
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TOWNSEND & COIT, Proprietors.

WE are now erecting an extensive Establishment for the manufacture of Railroad Cars, which will be furnished with all the conveniences known to the business, and ready for operation by the 1st day of June next, at which time we will be ready to execute orders for Baggage, Box, Platform and Cattle Cars, of the most approved style and finish. Meantime we are prepared to make contracts for work to be furnished during the summer and fall.

TOWNSEND & COIT, Buffalo.

February 26, 1853.

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RECEIVER AND FORWARDER of Railroad Iron, Chairs and Spikes

Also, Cars, Locomotives, and all kinds of Machinery for Railroad purposes.

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January 12, 1853.

SIXTY MILES DISTANCE SAVED!—ONLY THIRTY-SIX AND A HALF HOURS TO CHICAGO.

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The following magnificent and unequalled steamers from the line between Buffalo and Monroe:

EMPIRE STATE, J. WILSON, Commander, leaves Buffalo Mondays and Thursdays,

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One of the above splendid steamers will leave the Michigan Southern Railroad Line Dock, at 9 o'clock, P. M. every day, (except Sundays) and run direct through to Monroe without landing, in 14 hours, where the Lightning Express Train will be in waiting to take passengers direct to Chicago in 9 hours; arriving next evening after leaving Buffalo.

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MONTREAL & NEW YORK AND Plattsburgh and Montreal RAILROADS.

☞ *Open through from Plattsburgh to Montreal.* ☜

Passenger Trains leave Montreal for Plattsburg at 8.30 a.m and 5 p.m., arrive at 2 a.m, and 7.30 p.m.

Leave Plattsburg for Montreal 7.30 a.m. and 4 p.m., arrive at 10 a.m. and 6.50 p.m.

Trains connect at Montreal with Steamers for Quebec, and the St. Lawrence and Atlantic Railroad for Sherbrooke and intermediate station.

Trains connect at Mooers Junction with Northern (Ogdensburgh) Railroad for Ogdensburgh and Lake Ontario Steamers for Lewiston, Niagara Falls and Upper Canadia, and all ports on the Western Lakes.

Trains connect at Plattsburgh by Steamer to Burlington with Rutland and Burlington Railroad and connecting lines for Troy, Albany, New York and Boston, and all intermediate stations. Also with steamers for Whitehall to the Saratoga and Washington Railroad, and connecting lines of road to Troy, Albany and New York.

Passengers will find this route unexcelled for comfor and dispatch, and attended with less fatigue and dely than any other. It possesses moreover the advantage of a short Ferriage of only *fifteen minutes* across the River St. Lawrence at Caughnawaga, which has never been known to freeze, and can be confidently relied upon at all seasons of the year.

☞ Frieght Tarins run daily each way.

For particulars see Frieght and Passenger Tariff.

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H. W. NELSON, Superintendent.

New York and Erie R. R.

PASSENGER TRAINS leave Pier foot of Duane street, as follows, viz:—

DAY EXPRESS, at 6 a. m. for Dunkirk and Buffalo.

MAIL, at 8½ a.m. for Dunkirk and Buffalo, and all intermediate stations. Passengers by this train will remain over night at any station between Binghamton and Corning, and proceed the next morning.

ACCOMMODATION, at 12½ p.m. for Delaware and all intermediate stations.

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NIGHT EXPRESS, at 5 p. m. for Dunkirk and Buffalo.

EMIGRANT, at 6 p.m. for Dunkirk and all intermediate stations.

On Sundays only one Express Train—at 5 p.m.

The Express Trains connect at Dunkirk with the Lake Shore Railroad for Cleveland, Cincinnati, Chicago, etc., and at Buffalo with first class splendid steamers for Cleveland, Sandusky, Toledo, Detroit and Chicago.

CHAS. MINOT, Sup't.

Notice to Contractors.

WARSAW & ROCKFORD RAILROAD.

THE preliminary Surveys are now complete for the First Division, (about 120 miles) from Warsaw, through Nauvoo, Oquawka, Keithsburgh, Rock Island and to Port Byron, including both Rapids of the Mississippi, and the location progressing. The character of the country is such, and the surveys so near to any location that will be made, that Contractors can satisfy themselves of the value of the work as well now as hereafter. Proposals are asked at the Office of the Company in Warsaw, Hancock County, Illinois, for the construction of the whole or part of the road, either by quantities or by the mile. Contract will not be made before the 1st of January, 1854, and only so soon thereafter as advantageous offers can be made. The Company are willing to make general contract, for cash or for cash and securities.

The route of the road is generally in the valley and second bottoms of the Mississippi, and the work can be completed very rapidly. The road is important as one of the improvements of the navigation of the Rapids, and also from its several (two at least) connections with other railroads.

WM. H. ROOSEVELT,
President.
W. R. KINGSLEY,
T. S. O'SULLIVAN, Engineer.
Consulting Engineer.
Warsaw, Nov. 17, 1853.

Drawing.

B. BLANDOWSKI, Topographical and Ornamental Draughtsman and Designer. Maps accurately drawn, enlarged or reduced from notes or copies. Ornamental designs for decorations, furniture, fences and ornamental foundry work. Architectural designs. Drawings from nature carefully prepared.

REFERENCES. Messrs. Miller and Freund, Ligneous Marble Works, corner of Franklin and Center streets, New York. Also H. V. Poor, Esq., Editor Railroad Journal, and Zerah Colburn, Assistant do.

Address, care of Railroad Journal, 9 Spruce street New York.

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.
Jan. 20. 1849.

To Railroad Companies, Machinists, Car Manufacturers, etc., etc.

CHARLES T. GILBERT,

NO. 80 BROAD ST., NEW YORK,

IS prepared to contract for furnishing at manufacturer's prices—
Railroad Iron,
Locomotive Engines,
Passenger and Freight Cars,
Car Wheels and Axles,
Chairs and Spikes.

Orders are invited; and all inquiries in relation to any of the above articles will receive immediate attention

Krupp's CELEBRATED CAST STEEL,

Which obtained the Council Medal at the London Exhibition in 1851.

Warranted unapproachable as to Quality and Size.

PLATERS and other Cast-Steel Rollers, of any dimensions not exceeding six feet long by eighteen inches diameter.
Piston Rods and Shafts for Steam Engines, not exceeding 2000 lbs. in weight.
Railway and other Axles, Cranks, Springs and Tyres.
Cannon, Rifle and Gun Barrels.
Mint and other Rolling Mills

Orders received by
THOMAS PROSSER & SON,
28 Platt street, New York.
Sole Agents for the United States.
Nov. 12, 1853.

To Contractors.

RACINE, JANESVILLE & MISSISSIPPI RAILROAD.

SEALED PROPOSALS will be received by the Racine, Janesville and Mississippi railroad Company, at their office, in the city of Racine, Wisconsin, until noon of Monday, the 2d day of January next, for the grading, masonry and bridging of their line of railroad, from near the village of Burlington, on Fox river, in Racine county, to the village of Beloit, on Rock River, in the county of Rock, a distance of forty-two miles. The work is divided into sections, from one to one and a half miles in length. Proposals will be received for one or more sections or for the whole work. Profiles and specifications can be examined by parties wishing to contract on and after the 20th inst. at the office of the Company in Racine.

This part of the line passes through the richest, most populous and healthiest part of Wisconsin, where provisions and other supplies can be obtained in abundance, and at low rates.

Any further information in reference to the work, may be obtained on application to Leverett H. Clark, Chief Engineer, or of the undersigned.

By order of the Board of Directors,
HENRY S. DURAND, President.

Communications by mail can be addressed as above.
Racine, Wis., Dec. 24, 1853.

To Railroad Companies.

COLLINS' PATENT
VENTILATORS,
FOR
Ventilating all kinds of
PUBLIC AND PRIVATE BUILDINGS
Railroad Cars, Depots, etc.

THE Subscribers would invite the attention of the public to the above celebrated Patent Ventilator. This Ventilator is the best one now known of, for giving a pure air in rooms, and ejecting all foul air. It has been adopted by all the principal Railroad Companies and Car Factories, and is extensively used for private dwellings, and for the cure of smoky Chimneys cannot be excelled. Manufactured and for sale by

BAKER & WILLIAMS,
No. 406 Market st., Girard Row,
Sole Agents for Pennsylvania.

CERTIFICATES.

Engineer Department P.R.R., Altoona, Feb. 8, 1853.

This is to certify that Messrs. BAKER & WILLIAMS, of 406 Market st., Philadelphia, have furnished a large number of Collins' Patent Galvanized Iron Ventilators for the P. R.R. Co., and that they have given every satisfaction, acting fully as represented. I consider them as a necessary appendage to an Engine House. We have them in use thirteen inches, and two feet diameter, acting equally well. So well satisfied am I of their usefulness, that the Engine Houses we are about building will be supplied with them at every point where a draft is necessary to free building of smoke. STRICKLAND KNEASS,
Principal Assistant Engineer P. R.R. Co.

Engineer Depart. P. R.R. Co., Pittsburgh, May 12, 1853.

Messrs. BAKER & WILLIAMS,

Dear Sirs—The 22 Collins' Patent Ventilators furnished by you for the Engine House at this place, have been in use several months and their merits have been fully tested and have given most perfect satisfaction; being constructed on true principles of Ventilation, and the workmanship is of a substantial and superior character. Yours truly, OLIVER W. BARNES,
3m40 *Principal Assistant Engineer P. R.R. Co.*

India-Rubber Railroad Car Springs, etc.

THE UNITED STATES CAR SPRING COMPANY, having completed their new Factory, are manufacturing and furnishing to *Railroad Companies*, and *Car Builders*, *RUBBER SPRINGS* of the best quality, on the most favorable terms.

Also, McMullen's superior *WHITE HOSE*, not only for Railroads, but all other purposes, and of any size or thickness required. Office No. 25 Cliff street,
Aug. 10, 1853. 3m New York.

Railroad Iron.

2,000 TONS FIRST CLASS WELSH RAILWAY IRON, to be made to any ordinary T pattern required by the buyers, and for shipment from Newport, Wales, in December, January, and March next, apply to the undersigned, for many years connected with the largest house in the trade. JOHN H. AUSTIN & CO.,
44tf 2 Ingram Court, Fenchurch street London.

OFFICE OF MICHIGAN AND NORTHERN INDIANA RAILROAD COMPANY, No. 18 William-st—NEW YORK, Dec. 15, 1853—DIVIDEND—A dividend of 10 per cent. on the capital stock of these Companies has this day been declared out of the profits of the last six months, payable at the office of the Companies, on and after the 3d January next. The earnings having been appropriated to the construction of the new lines of Road in Indiana and Michigan, the dividend is made payable in "Construction Stock," bearing 8 per cent. interest until the completion of the work. All fractional parts of shares will be paid in cash. Holders of "Construction Stock" are notified that interest thereon to first January, at the rate of 8 per cent. per annum, will be paid in cash at this office on and after the 3d January next.

The Transfer Books will be closed from the 22d inst. to the 3d January.

By order of the Board of Directors,
EDWIN C. LITCHFIELD, Treasurer.

Small Rails.

THE SUBSCRIBERS manufacture and keep constantly for sale, *Light Rails* of the most approved patterns, weighing 22, 25, 28, 40 and 60 lbs per yard, suitable for Colliers, Miners, Quarrymen and Contractors, or for turn outs, depot and branch tracks. CHARLES E. SMITH & Co
1744 Fairmount Iron Works, Philadelphia.
CHAS. E. SMITH, HENRY MORRIS,
THOS. T. TASKER, WISTAR MORRIS.

Railroad Iron Via Quebec.

JOHN ANDERSON & Co.,
COMMISSION MERCHANTS,
SHIPPING AGENTS AND BROKERS,
QUEBEC,

PARTICULAR attention given to the Transhipment of Iron in Transitu for the Western Lake Ports, likewise to the Shipment of Rails in Great Britain.
Quebec. Dec. 2, 1853.

Railroad Iron.

TWO THOUSAND TONS Erie Pattern, 58 lbs. to the yard, already shipped, and expected here soon—for sale by
38tf JOHN H. HICKS, 90 Beaver st.

1300 Tons Yorkshire T rail, weighing 56 lbs. to the yard, and of a superior quality daily due and for sale by,
NAYLOR & CO.

Oxford Furnace, N. J.

ESTABLISHED A. D. 1743.

THE Subscriber manufactures and keeps constantly on hand for sale, every variety and size of Railroad Wheels, made from the celebrated Oxford Iron. All orders addressed to CHAS. SCRANTON, Oxford Furnace P. O., will be attended to promptly.
Sept. 11. 1852. 1y*

Machinists' Tools.

A SUPERIOR CLASS,

DESIGNED particularly for Railroad work, manufactured by L. B. TING & CO., (late ALDRICH, TING & Co.,)
October 7, 1853. LOWELL, MASS.

Henry I. Ibbotson,

MANUFACTURER OF
FILES AND SAWS,
Warranted of superior quality.
Office and Warehouse, 218 Pearl st., New York.

Book and Job Printing.

The undersigned have added to the PRINTING ESTABLISHMENT of the "RAILROAD JOURNAL," an extensive OFFICE for *BOOK AND JOB PRINTING*, which they are now prepared to execute in the BEST manner, and with DISPATCH. They respectfully solicit from RAILROAD COMPANIES, orders for the PRINTING of *Exhibits Time-tables, Circulars, Tickets, &c., &c.*

J. H. SCHULTZ & CO.
New York April 9, 1853.